BOSTON UNIVERSITY

GRADUATE SCHOOL

Dissertation

SOME METAPHYSICAL IMPLICATIONS OF THE CATEGORY OF POTENTIALITY

by

Joseph D'Alfonso
(A.B., Boston University, 1928)
(S.T.B., Boston University, 1931)

submitted in partial fulfillment of the

requirements for the degree of

Doctor of Philosophy

1942 MW

APPROVED

by

First Reader Edgar S. Brightman
PROFESSOR OF PHILOSOPHY

Second Reader E. Harold De Wolf
PROFESSOR OF

TABLE OF CONTENTS

"Luckily, life can go on
without solving this riddle."
(Bowne, TTK, 95.)

CHAPTER I

INTRODUCTION

Potentiality is a category of explanation which itself needs to be explained. As a category of explanation its function is highly successful. But philosophy is not satisfied with this good showing, and is critical enough to investigate the metaphysical implications of so useful a concept. It may be that this category is a subjective fiction, or if valid it may have some very significant metaphysical implications.

I. STATEMENT OF THE PROBLEM AND METHOD OF PROCEDURE

The primary problem of this study will be to investigate some of the metaphysical issues connected with the concept of potentiality. To do this the meaning of the concept will have to be clarified, and its use by several significant philosophers will be considered. The present status of the concept will then be investigated, and the metaphysical implications will be brought out and analyzed.

II. DEFINITION

In an inquiry of this kind there is a certain sense in which the definition of its subject can adequately be given only at the end of the investigation. Yet it is necessary to delineate the field of investigation somewhat, so a preliminary

definition will be in order. The most general and formal statement of such a definition may be expressed in these terms: Potentiality is what is capable of coming into actuality, or the potential is what may become actual. This definition is not very illuminating, but it does give the formal meaning of the category. A little reflection will show that even in this formal definition the potential can be considered such only in relation to the actual. This is true both in a logical and in a real sense. The concept of potentiality implies the concept of actuality, for the concept of potentiality points to actuality or it would not be the concept of potentiality. Potentiality is thus the ability to become what now is not, potentiality, qua potentiality, is such because it implies the actuality of what now is not actual. That the potential has meaning only in relation to the actual is even more obvious when the potentiality of a thing is considered. In this sense potentiality means the ability of the thing to do or receive any one or more definite types of determinations consistent with the nature of the original thing. Thus we cannot speak of the potentiality of an acorn with any intelligible meaning unless we have in mind, for example, the concept of an oak. The acorn is not merely potential. It is a potential oak.

The concept of potentiality must be distinguished from the concept of possibility. Every potentiality is a possibility, but not every possibility is a potentiality. Possi-

bility is a logical concept primarily (i.e. the thinkable), whereas potentiality is limited to reality. In its widest sense anything conceivable may be considered possible. Thus it is possible that there should be a realm of round squares, though, of course, in any realm that has meaning for us such a conception is impossible. In a more sensible use of possibility we would say that any self-consistent concept is possible. Thus the existence of elves and fairies is possible. But in neither use would the concept be synonymous with potentiality. Potentiality applies to reality as we know it.

There is a sense, however, in which potentiality is broader than possibility. That is when possibility is used in the sense of probability. Thus every acorn is a potential oak, but the possibility (probability) of any one acorn becoming an oak is very limited. Paradoxical as it may seem, the reason possibility in this sense is more limited than potentiality is that it is more inclusive than potentiality. Potentiality applies to the acorn in isolation, but the possibility of that acorn becoming an oak involves a whole complex of relevant factors, e.g., that the acorn shall be planted, that the soil be good, that water be present, that the right temperature prevail, etc. The concrete possibility of a thing involves the complete environment of that thing. In this concrete sense possibility is more akin to actualization than potentiality.

In a general way the difference between potentiality and possibility may also be expressed by showing the logical opposite of each term. Thus the proper opposite of potentiality is actuality. The proper opposite of possibility is not so much actuality but impossibility and necessity.

Potentiality is at times used in both an active and a passive sense. When this distinction is made then active potentiality is equivalent to "tendency;" passive potentiality is equivalent to "capacity." The acorn's tendency to become an oak is active potentiality. The wax's capacity to receive impressions is passive potentiality. But potentiality in the passive sense must be used with discretion. As Bradley pointed out,[1] it is possible for a fruit stone to lodge in a man's throat and cause his strangulation, but it can hardly be said that a fruit stone has the potentiality for strangulation. Such a description, at least, is not a fruitful one.

III. REVIEW OF PREVIOUS RELATED STUDIES

A survey of recent philosophic literature reveals that the subject of potentiality has been conspicuously avoided, as a separate study, except by the Neo-Scholastics. Several German philosophers have written books on possibility,[2] but

---

1. AR, 387.

2. Meinong, MUW; Verweyen, PDM; Baumgardt, DM: Gallinger, POM; Pichler, MUW; Hartmann, MUW.

only one English writer (Buchanan) has written a book about it.[3] The University of California publication, Possibility, is of composite authorship. In addition to the articles in this volume a few more articles on the same subject have appeared in periodicals, but only two articles have been found on "Potentiality."

Charles E. Whitmore writing on "The Paradox of Potentiality"[4] argues that the concept of potentiality does not imply preformation, but only asserts the arrival of novelty. The time span is a duration with memory at one end and anticipation at the other. In the conscious experience of potentiality we anticipate more at the end of the process than we started with. What we anticipate, however, is based on past experience. The paradox of potentiality is the fact that it is an experience of anticipation, but is based on retrospection. This suggestive treatment of potentiality is based on Baldwin's psychological analysis[5] and the concept of the specious present. It is valuable, but does not pretend to consider the metaphysical implications of the concept.

Professor Demos[6] though entitling his article "Possibility and Becoming" uses the word "possibility" in the sense

---

3. POS.

4. Art. (1939).

5. Art. "Potentiality" Baldwin, DPP.

6. Art. (1926).

of potentiality. Process and becoming can be explained only by the reality of the possible, for "process is the injection of possibility into actuality."[7] Without possibility there would be no spontaneity, no emergence, but only determinism or chance. Possibility has as much or as little reality as actuality. Either both are real, or both are abstractions. They stand or fall together, for, in process, the actual disappears as soon as it appears. Yet he does not tell us where to place the reality of possibility. He states that actuality and possibility both have a common ground, but he will not deal with this metaphysical ground beyond saying that the consideration of the nature of that ground takes one to the roots of metaphysics.[8]

A historical survey of possibility is given by Cohen[9] but he deals mostly with the logical aspect of possibility, rather than with potentiality. Likewise Hollands[10] reviews possibility in the writings of Spinoza and Leibnitz, but does so primarily to criticize G. E. Moore's and Bertrand Russell's theory of "essence" and judgment.[11]

---

7. Ibid., 234,5.
8. Ibid., 240.
9. Art. (1930).
10. Art. (1907).
11. Ibid., 613-615.

In analyzing the potentiality of things D. L. Miller[12] shows that "the potentiality of a specific thing is known only when we have stated the law which the thing in question follows."[13] But since this law is revealed only in the thing's interaction with its environment, the potentiality of a thing can be determined only in relation to its environment.[13] These activistic and organic aspects of D. L. Miller's analysis are very fruitful and suggestive, and show a significant and concrete grasp of the meaning of potentiality, but again the paper is not concerned with the fundamental metaphysical implications of the category.

Possibility, a University of California publication, is a work worthy of its place in the excellent series of philosophic volumes released by this institution. Being of composite authorship several strands of thought are found in this book. Though much of the book is concerned with the logical aspects of possibility, the articles by Adams ("What Makes Possibility Possible"), Loewenberg ("Possibility and Context"), Strong ("The Possible and the Actual"), and Pepper ("A Contextualistic Theory of Possibility") have significant metaphysical interest. They all profess an empirical approach. Loewenberg and Pepper emphasize the part played by the total

---

12. Art. (1936).

13. Ibid., 25.

context in creating possibilities. Strong emphasizes the potentialities of the members of the context. Adams sees possibilities in the repeatability of the universal. This green patch is an actuality, but green is a possibility for any number of patches. The ultimate metaphysical implications of these interesting analyses are not considered, however.

Hartmann[14] claims that in the realm of being the possible, the real, and the necessary are identical. But the temporal forms of our experience and the limitations of the human mind create the situation where we have the possible and the actual and the necessary. Since there is no ontological possibility and no reality to time, the metaphysical aspects of potentiality are eliminated, for potentiality is only a phenomenon.

A study in the bearings of possibility on the philosophy of religion, miracles, free will, etc. is provided by Verweyen.[15] The metaphysical side is not especially considered. He is positivistic. The category is analyzed in relation to different fields of thought.

Baumgardt[16] criticizes the theory of possibility

---

14. MUW.

15. PM.

16. DM.

from the Kantian standpoint. Meinong,[17] Pichler,[18] Gallinger[19] are the phenomenologists he criticizes. In phenomenology objects are "Soseiende" (thus-being) or a characterized something whether existent or not.[20] Possibility is thus what can belong to the unity of an object, and impossibility is what cannot belong to the unity of an object. "Es muss die Identifikation des Vierecks mit dem runden Ding hinzutreten, damit etwas Unmögliches gedacht wird."[21] All this is related to Kant's "real" possibility, but is not fruitful metaphysically, however rich it may be in description.

The Scholastics make much use of the notion of potentiality, but though the notion is used by them, they do not offer very penetrating critical analyses of the concept. Their main concern is to show that phenomena can be explained by the notions of actus and potentia. A hierarchical system, a realm of Essence, and the notion of substance are the other ingredients of the system. Van Roo[22] gives a typical presentation of the Scholastic system. He does so from the point

17. MUW.

18. MUW.

19. POM.

20. Baumgardt, DM, 14.

21. Pichler, MUW, 10.

22. Art. (1940).

of view of potentiality, so is relevant for this inquiry. Reality is divided into a hierarchy. Being occupies the top realm. Essence occupies the next lower realm. Particulars occupy the realm below Essence.[23] The realm of Being is the realm of God, the realm of Essence may be called the realm of universals or forms, and the realm of particulars is the realm of space and time. Potency is the principle of limitation. "All the perfection comes from the side of the act; all the limitation, from the side of the potency."[24] Now Being is act, and matter is pure potency; or God is pure perfection and matter is pure limitation. Now in the hierarchy it is the principle of limitation that can break up unity into multiplicity, and the principle of limitation (or potency) for each realm is its subordinate realm.[25] Thus Essence breaks up Being into many Forms, and matter breaks up Forms into many particulars "here and now."[26]

A presentation of a more dynamic aspect of the Scholastic theory of potentiality is given by Dubray[27] (for whom potentiality means aptitude to change, or the presence

---

23. Ibid., 3f.

24. Ibid., 2.

25. Ibid., 3.

26. Ibid., 4.

27. Catholic Encyclopedia, "Actus and Potentia."

of the germ to be evolved) and Edward M. O'Connor,[28] who tries to fit modern physical theories of energy into the Scholastic definition of potentiality. Potentiality for him, is "a power in existing things, to do or to become something not yet actual" (p.36).

Much has been written on the question of probability and possibility[29] from the point of view of symbolic logic. But this aspect is beyond the scope of this inquiry, and so will not be dealt with.

In addition to these definite studies on the problems of possibility and potentiality, there are references to potentiality in many works on metaphysics.[30] To many of these we shall refer as the investigation proceeds, but none gives a separate and detailed study of the metaphysical aspects of potentiality.

IV. ORGANIZATION OF REMAINDER OF THE THESIS

After this definition of the field of inquiry, and a brief review of recent works on potentiality and possibility, the next step in the investigation is to consider four phi-

---

28. PAE.

29. E.g., Kattsoff, Art. (1937).

30. Whitehead, Bowne, Bradley, are some examples here.

losophers who have made significant contributions to the subject. The philosophers to be considered are: Aristotle, who gave the concept of potentiality its classic exposition; Kant, who shows the meaning of Möglichkeit for Critical Philosophy; Hegel, who shows the meaning of Möglichkeit in the Dialectical Philosophy; and Whitehead, whose system makes extensive use of the concept.

The selection of these four men, is, as any selection must necessarily be, somewhat arbitrary. Yet we have been guided by a principle, the principle of relevancy to modern thought. These four men conform to the spirit of modern thought. Aristotle and Hegel are philosophers of process and becoming. Their philosophies are concrete and organic, and so is the spirit of much modern philosophy. Kant's Critical Philosophy with its emphasis on, and practically discovery of, the constitutive activity of thought, gave modern philosophic thought a new orientation, and so deserves a place in this investigation. Whitehead is perhaps the greatest living Anglo-American philosopher.

By the same principle of relevancy to modern thought, we have omitted from this inquiry any special treatment of the place of potentiality in the philosophy of the Middle Ages. The subject was of primary importance for the Middle Ages, but the spirit of its philosophy is alien to our own. An analysis of Aristotle's contribution to the subject will give the essence of the pertinent contributions that the phi-

losophy of the Middle Ages may have made. Again other philosophers, such as Spinoza and Leibnitz, have dealt with possibility, and though they have given metaphysical applications to their treatment,[31] still they have treated possibility in its logical meaning, as opposed to necessity and impossibility, rather than in the sense of potentiality as defined for this inquiry.

The chapter on Aristotle, Kant, Hegel, and Whitehead, will also include a section on the status of the category of potentiality in various fields of modern thought. The third chapter will give a critical definition of potentiality, will consider some related concepts, and show some of the difficulties in the notion. The last two chapters will consider some further metaphysical implications of the category.

---

31. Spinoza, claiming that all that is truly possible must also be necessary, ends up with determinism; Leibnitz defends possibility in order to save God's freedom.

CHAPTER II

POTENTIALITY FROM ARISTOTLE TO WHITEHEAD

INTRODUCTION

This chapter aims to present an interpretation of the general principles, rather than a minute and thorough exposition of the details of the view of potentiality held by Aristotle, Kant, Hegel, and Whitehead. A thorough exposition would require an analysis of all the writings of these men. This inquiry, however, limits itself to those works that have considerable sections on potentiality. The reason for this is that the main problem of this study is not Aristotle, Kant, Hegel, nor Whitehead, but potentiality itself. These men are studied for whatever light they may shed on the problem. The treatment of Aristotle will be limited to the Metaphysics, that of Kant to the Critique of Pure Reason, that of Hegel to the smaller Logic, that of Whitehead to Process and Reality. A brief analysis of the present status of the category, will complete the chapter.

I. ARISTOTLE

Aristotle gave the concept of potentiality its classic expression, so a study of the subject may profitably begin with him.

1. POTENTIALITY AS A UNIFYING PRINCIPLE

Aristotle's primary interest lay in the world of

concrete experience. To explain this world in all its concreteness and in all its richness of variety and process, he had to investigate universals, first principles, and primary causes, but the object of his quest was always to gain knowledge of the particulars. "It is clear that we must obtain knowledge of the primary causes, because it is when we think that we understand its primary cause that we claim to know each particular thing."[1] All metaphysical investigation, then, has for its aim the knowledge of particulars.

Plato said that philosophy cannot deal with the changing, perishing, concrete things, since the changing thing cannot be known. Knowledge is only of the permanent, and so philosophy must deal with the universal, the permanent.[2] Aristotle admits that knowledge must be of the universal and permanent, and that philosophy deals with this type of knowlege,[3] but these universals and permanencies must be

---

1. Met., I,iii,1(983a, 24ff.).

2. E.g., Theaetetus, 183. "If nothing is at rest, every answer upon whatever subject is equally right." This may not have been Plato's final thought, but it is Aristotle's interpretation of Plato and so will be accepted for the purposes of this study. That this interpretation of Plato is to be attributed to Aristotle is evident by the fact that in Met., I,vi,2(987b, 6f.) Aristotle has Plato claim that "there can be no general definition of sensible things which are always changing."

3. Met., I,ii,4(982a, 22ff.). "The knowledge of everything must necessarily belong to him who in the highest degree possesses knowledge of the universal (καθολου) because he knows in a sense all the particulars which it comprises."

truly descriptive of the particulars or they do not give us knowledge of the particulars. He believes that Plato's theory of Forms is not descriptive of particulars. For one thing the theory of Forms is a static theory and so cannot describe the dynamic universe of changing things, and so knowledge of these Forms is of "no help towards the knowledge of other things."[4]

If changeable particulars are to be known at all, they must be known as they are, in all their changeability and becoming. They must be known as changing because changeability is part of their nature, and things can never be known until they are known as they are. But how can the changeable be known, for it was admitted that knowledge is of the universal and permanent? The changing things can be known only if they contain something permanent and universal.[5] Can anything universal and permanent be found in changing particular things? Clearly it cannot be a static principle or it would not be descriptive of change. To meet the requirement of permanence, it must be a unifying principle, unifying into one abiding whole (or identity) a stream of change. To meet the requirement of truly describing changing things, it must be a dynamic principle, a principle applying to a flux and not

---

4. Met., I,ix,9(991a, 11f.).

5. Met., III,iv,1(999a, 28ff.). "We acquire our knowledge of all things only in so far as they contain something universal, some one and identical characteristic."

to a static state. To meet the requirement of universality (καθόλου) it must apply to all things. Where is such a principle to be found?

Aristotle implies that it is to be found in the concepts of potentiality and actuality. These two concepts cover the history of a thing in all its aspects. In fact these two concepts are just different aspects of one and the same process, the process is seen to be one only as it is viewed from these two aspects. The unity is also shown in the fact that the two aspects imply one another. Potentiality by its very meaning points towards actuality, and an existing state is called an actuality in reference to its potentiality.

To know both the potentiality and actuality of a thing is to know the whole thing genetically. Thus it is that Aristotle claims that potentiality and actuality are two ways of understanding being. "The senses of being are analysable . . . also in accordance with potentiality and actuality."[6] In other words, potentiality and actuality form part of the very essence of a thing. That is, potentiality and actuality are not qualities a thing may have, but are aspects of being proper. A thing does not have potentiality, it is potentiality (is potentially a definite kind of being). Likewise, a thing does not have actuality, it is actuality (is a definite kind of being in actuality).

---

6. Met., IX,i,2(1045b, 33f.).

Since a thing is both actuality and potentiality, then the thing is both what it is and what it may become. Thus the thing is a concrete process taken as a whole. A thing is a history. The beginning of that history is potentiality relative to its end. The end of that history is actuality relative to its beginning. he potential aspect and the actual aspect of that history gathers up both ends of the process and makes it one, giving it unity and identity. Consequently the changing thing can be known.

To know a thing in potentiality is to know its power, its δύναμις (the Aristotelian word for potentiality). To know a thing in actuality is to know it in ἐντελέχεια (complete reality) and in ἐνέργεια (activity.)[7] Actuality then is the revelation of a thing's power (δύναμις) both by what it does (ἐνέργεια) and by what it becomes (ἐντελέχεια). Thus ἐνέργεια may be considered as the actuality of the process of becoming and ἐντελέχεια as the climax of the

---

7. Met., IX,iii,10(1047a, 36f.). "τοῦτο δὲ ὅτι οὐκ ὄντα ἐνεργείᾳ ἔσονται ἐνεργείᾳ· τῶν γὰρ μὴ ὄντων ἔνεια δυνάμει ἐστίν· οὐκ ἔστι δέ, ὅτι οὐκ ἐντελεχείᾳ ἐστιν."

("This is because, although these things do not exist actually, they will exist actually; for some non-existent things exist potentially: yet they do not exist, because they do not exist in complete reality.").

Here both ἐντελέχεια and ἐνέργεια are used for actuality, but obviously ἐντελέχεια (complete reality), suggests the final stage of actualization (the root of ἐντελέχεια seems to be τέλος, end, or last stage), whereas ἐνέργεια is actuality in the sense that the actual is what is active. Fuller (HGP:A,55) suggests that "entelechy" is the activity of maintaining an attained actuality, as distinguished from the ἐνέργεια (activity) involved in attaining it.

process. Yet both are actuality in reference to δύναμις, for obviously both the process and the final stage must have been within the thing's power of becoming or they would not have become what they became nor in the manner they became. There is a sense in which ἐνέργεια is the connecting link between δύναμις and ἐντελέχεια but this is true only in an abstract way. The truth is that this δύναμις can become this ἐντελέχεια only by being present, actualized, in the whole process of this ἐνέργεια, for indeed this ἐνέργεια is the activity of this δύναμις and thus may truly be called its actuality.

The complete reality of a thing is what it becomes when it reaches the climax of its development. In a sense to know this ἐντελέχεια is to know the thing, for to know a thing in its climactic expression is to know that thing at its best. Yet there is a difference between a climactic expression and a complete expression. The climactic expression is a stage in a process. In a sense it contains the complete process, but only implicitly. The complete expression embraces the climatic expression <u>and</u> the process, and does so not implicitly but explicitly. Thus the complete actuality of a thing is both its climactic expression and its process of actualization.[8] The conclusion of this interpretation is

---

8. To be sure Aristotle is not always exact in his terminology and so at times he uses ἐνέργεια in the sense of ἐντελέχεια (so Tredennick, <u>Met</u>., Intro. xxix), but in spite of this, the fact that he does use these two terms justifies the interpretation here given.

that to know a thing then is to know not only its ἐντελέχεια, but also its process and its potentiality.

But how can a process be known? Knowledge is of the permanent and the identical, whereas process by its very nature is change and flow. The potentiality may be known and so may the entelechy, but not the process. But in so far as δύναμις points towards ἐντελέχεια, then it is obvious that this process has a definite goal. It is not mere flow, but flow in a definite direction, towards a definite goal. In a word it is a vector, and so has meaning (directional meaning), and so has identity (directional identity); as such it may be known.[9]

What does it mean to know the potentiality of a thing? Clearly, only as it becomes actuality can it be known. A potentiality is an actuality viewed in retrospect. Potentiality is an aspect of actuality, and the potentiality of a thing can be concretely known only in relation to its actuality. "The formula and knowledge of the actual must precede the knowledge of the potential."[10] To know the potentiality of a thing, then, can only mean that the thing's actuality is

---

9. For example H_2O has one vector from ice to steam and another from steam to ice. Each one of these vectors can be known as such, though of course the concrete knowledge both of their various phases and of the starting points and goals of each would be needed to really know what the nature of H_2O is. Of course Aristotle did not develop these implications of his terms, but this elaboration is consistent with his thought.

10. Met., IX,viii,3(1049b, 16f.).

already known. We know that H_2O is ice in potentiality, because we know the nature of the actuality, ice. Had ice never been known, then it would never have been known that H_2O may take the form of ice.

But this cannot be the whole story, for a potentiality may never become an actuality. "A thing may be capable of being and yet not be."[11] This arrested potentiality is real, though, due to its frustration, it will never become actual. Thus an acorn may never become an oak and still be a potential oak in a true sense. In this sense a potentiality is only a possibility. To deny potentiality as a possibility is to identify potentiality with actuality.[12] That is the error of the Megaric school "who say that a thing only has potency when it functions."[13]

The truth of the matter seems to be that a thing must have potency (i.e. possibility of becoming), or it cannot have directional process, vectors. The actualization of that potency may be frustrated for any number of reasons, yet the potency is there. What that potency is in detail can be known only if it is actualized, but that there is a potency, even if never actualized, must be asserted. To the question "how can what is unknown be asserted?" the answer is that the assertion

---

11. Met., IX,iii,7(1047a, 21f.).

12. Met., IX,iii,7(1047, 18ff.).

13. Ibid., IX,iii,1(1046b, 29f.). On the Aristotelian treatment of "possibility" cf. V,xii,10.

is a matter of coherent faith. There is as much justification for asserting that this acorn is a potential oak (meaning that under the proper circumstances it will become an oak), as there is for asserting that if this acorn rolls off the table it will fall down, though it would be impossible to predict just where it would fall. It is still true that potentiality has meaning only in reference to actuality, that is, that potential change can be asserted only because actual change has been experienced, but once the discovery of the principle of potentiality has been made it can be rationally asserted of a thing whenever reason and experience justify the assertion. In a world of temporal experiences change is real, and potentiality means just this ability of a thing to undergo change, for "potency is the source of change."[14] How that source is to be metaphysically conceived, is, of course, the problem of this study.

2. PRIORITY OF ACTUALITY

The identity of changing things, then, is provided by the two concepts of potentiality and actuality. When a thing is known from both these aspects, it is known as a unity, a process, and a concrete particular. But to know the potentiality of a thing it is necessary to know the actuality it may become. Thus in a sense the actuality must be prior to the potentiality. Now Aristotle contends that this is true not

14. Met., IX,i,4(1046a, 10).

only in an epistemic sense, but in a real sense as well. In fact it is true in several senses.[15] Now priority has several meanings.[16] Aristotle tries to show that the actual is prior to the potential formally, substantially, and in a certain sense even temporally.[17] That actuality is formally prior to potentiality is evident from the previous discussion. The potential cannot be defined (as to content) except as we define the actual. It is possible to think of an acorn as a potential oak only if the oak is thought of. But actuality is prior to potentiality in a deeper sense also, says Aristotle.

Without going into the various meanings of substantiality for Aristotle, it seems clear that by substantial priority[18] he means the pull of the ideal of perfection upon individual things. It is a teleological and perfectionistic viewpoint of becoming as opposed to determinism and mechanism. Thus animals have eyes that they may see, and do not see in order to have eyes.[18] In so far as the true essence of a thing is to be found in the thing's purpose, or goal, it follows that since this goal is the final cause of the thing's becoming, then this goal is causally prior to the potentiality,

---

15. Met., IX,viii. This whole chapter is devoted to this theory, and there are other passages as will be soon shown.

16. Met., V,xi.

17. Met., IX,viii,2(1049b, 13f.).

18. Met., IX,viii,8ff(1050a, 3ff.).

and so the essence of a thing (or its form) is prior to its potentiality. In simpler terms, potentiality implies an end, and the end cannot be <u>any</u> end but a definite end. But a definite end must be an actual end. In what sense an end not yet realized can control the process of its own realization Aristotle takes up under the theory of the prime mover.

As to temporal priority the field is divided. In one sense the actual is prior, in another the potential is prior.[19] Take a thing by itself and potentiality is temporally prior to actuality. "The individual actuality is posterior in generation to its potentiality."[20] In fact a potentiality may never become an actuality, as we saw above.[21] Nevertheless the potentiality must be a reality or the actuality would <u>never</u> come about. The potentiality must have being in some sense. If it be merely a concept it can never account for process. The fact that an acorn is a potential oak rather than a potential pup, means that the oak must be in the acorn in some sense, for only thus can it become an oak or, to use one of Aristotle's illustrations, the learner can learn because even before he learns he possesses "something of the

---

19. <u>Met</u>., IX,viii,2(1049b, 13f.), and 4ff.

20. <u>Met</u>., IX,ix,5(1051a, 32ff.).

21. Cf. ibid., III,vi,6(1003a, 1f.) "The potential need not necessarily always become actual."

science."[22] But the seed (as potentiality) can possess these tendencies only because there was a prior actuality that imparted them to it. "Prior in time to these potential entities are other actual entities from which the former are generated."[23] This actual oak was potentially in that seed because it was produced by a previous actual oak.

The temporal priority of actuality to potentiality in the above sense is true not only in the case of organic generation, but of the universe as a whole. In fact the movement from potentiality to actuality in a particular thing can be explained only as we see the particular against its cosmic background. "In point of time . . . one actuality presupposes another right back to that of the prime mover."[24] As a result, though potentiality seems to be prior, and in the history of a particular thing taken by itself it is prior, yet the world could never come about were not actuality the fundamental factor of the universe. If potentiality is prior "there can be no reality; for everything may be capable of existing, but not yet existent."[25] A principle whose essence is actuality is needed to set potentiality in motion. It must be an eternal actuality. Since the world has always existed, generation and destruction must be explained by a

---

22. Met., IX,viii,7(1050a, 1f.).

23. Met., IX,viii,5(1049b, 23f.).

24. Met., IX,viii,14(1050b, 4); cf. also XII,vi,5.

25. Met., XII,vi,5(1071b, 26f.).

theory of cyclic change.[26] Disregarding Aristotle's astronomic speculations for the present, it may be stated that the principle of actuality which explains the cycle, setting it and sustaining it in motion, is the prime mover, "which moves without being moved."[27] This unmoved mover can cause motion without itself moving because it is the object of desire, the object towards which the whole creation strives. It is complete actuality, complete rest.[27]

The theory of the Prime Mover will be considered later. Here it is well to restate some of the more significant principles of Aristotle's doctrine of potentiality. (1) Potentiality and actuality are different aspects of the same "thing". (2) Potentiality is known only through its actuality. (3) The potentiality of a thing is the thing's possibility of becoming. It is thus a thing's power, δύναμις. (4) But this power is definite and actual, or it would never become. (5) Thus actuality is prior to potentiality. Potentiality is actuality's function in becoming. (6) Actuality is the fundamental factor of the universe. (7) The Prime Mover is complete actuality. Aristotle thus considers potentiality from the epistemic aspect (points 1 and 2 above), from the metaphysical aspect (points 6 and 7), and as a definite power in a particular "thing" (points 3,4,5).

---

26. Met., XII,vi,9(1072a, 7ff.).

27. Met., XII,vii,2(1072a, 23ff.).

Paradoxical as it may seem, in this latter aspect potentiality is itself an actuality. It is a δύναμις actually present in the thing. It is real, not a mere aspect of the "thing".

3. FORM AND MATTER

So far potentiality has been considered from the point of view of process, the development of organisms being the best illustration of this aspect of potentiality. Aristotle, however, looked upon the world not only dynamically but also statically. When he explained things statically he substituted the terms form and matter for actuality and potentiality respectively. The relationship between potentiality and actuality thus takes on a different aspect. Potentiality is to actuality as matter is to form. Now a thing is both matter and form, "for that which is generated will always have to be . . . partly matter and partly form."[28] The form of a thing is its definition, its organization, also its function. The matter of a thing is its constituent part or stuff.

> Hence in defining the nature of a house, those who describe it as stones, bricks and wood describe the potential house, since these things are its matter; those who describe it as 'a receptacle for containing goods and bodies'. . . describe its actuality.[29]

But matter and form always exist together, for him, as

---

28. Met., VII,viii,4(1033b, 12ff.).

29. Met., VIII,ii,8(1043a, 15ff.).

far as finite things are concerned. Form exists in the object and matter exists in the object. They are distinguishable in thought only, not in reality. Matter, for Aristotle, is not the "matter" of the materialists, but a relational term. Matter is something out of which something else is composed.[30] It is not one homogeneous stuff, but what can receive further determinations. Thus wood is matter for a door, and door is matter for a house. Or, to use another illustration, hay is matter for cow, cow is matter for meat, meat is matter for man, man is matter for the state. From one point of view a thing is form, from another point of view it is matter. A piece of steel as such is a particular form (actuality), but it is also matter for a sword. Thus there is a hierarchy of matter and form. The more indeterminate a thing is the more "matter" and the less "form" it _is_ (not _has_). The more determinate a thing is the less "matter" and the more "form" it is. Thus at one end is complete indetermination or ultimate matter. At the other end is complete determination or pure form. But ultimate matter as complete indetermination is non-existent. It is a mere abstraction, for all existents must have some form.[31] Pure form as complete determination, on the other hand, exists. It is God, the Prime Mover, the perfect being lacking no determination, no actuality. From this point of

---

30. _Met._, VII,vii,2(1032a, 16ff.).

31. _Met._, IX,vii,5-7(1049a, 25ff.); Fuller, HGP:A, 62.

view matter is a retarding element, the negation of form, but it is also the principle of individuation. It makes the difference between a bronze Hermes and a wooden one.

The interweavings of all these various strands in Aristotle's conception of matter is beyond the scope of this study, as is also any attempt to reconcile their contradictory implications. One contribution of all this to the conception of potentiality is that from the static point of view potentiality as matter is passive, whereas from the dynamic point of view potentiality is active. Matter being what can receive further determination, potentiality becomes the capacity to receive determinations. The wood receives the form of Hermes that the sculptor carves from it. The wood does nothing beyond receiving. It is potential only in the sense that it can be worked upon in certain ways. It may also be conceived as a negative potentiality in the sense that it rejects all determinations it cannot receive.

For Aristotle, moreover, passive and active seem to be relative terms.[32] Matter is passive, but matter is also a cause "the principle in the patient itself which initiates a passive change in it by the action of some other thing."[33] Pure passivity is nothing, but potentiality as material cause

---

32. Met., IX,i,5-9(1046a, 11-35).

33. Loc. cit., 1046a, 12ff.

is something. It is the element of individuation, of concretion. Thus a saw cannot be generated from wood.[34] Matter is the proximate cause and constitutes the difference between a wooden Hermes and a marble Hermes. (The material cause is the proximate matter and not primary matter.)[35] Potentiality is thus the principle of concretion.

The statical view is responsible for the hierarchical conception of the world, rather than the evolutionary. Potentiality as process refers to the development of things, especially organisms, as such. Potentiality as matter considers the relation of things to other members in the hierarchy of existents, from the most "material" existent to Pure Form, or God. Pure Form, the logical demand of a completed hierarchy of matter and form, provides the universal final cause for all becoming, and so is the explanation of the dynamic view as well.

Another distinction between the dynamic view and the static view of potentiality, is the difference between immanent teleology and external purpose. Organisms, as the best example of dynamic potentiality, have immanent teleology. Artifacts, as the best example of the static conception of potentiality, are products of external purpose. "Art is a generative principle in something else; nature is a generative

---

34. Met., VIII,iv,3(1044a, 28ff.).

35. Loc. cit. 5(1044a, 34ff.).

principle in the subject itself (for man begets man)."[36] The development of the acorn is due to immanent teleology, but the production of Hermes requires the four causes; material, efficient, formal, and final, the final cause being the purpose in the sculptor's mind. The wood is a potential Hermes, but it takes both the purposing and the agency (efficient cause) and the conceiving (formal cause) of the sculptor to produce the actual Hermes. External agency and external purpose are needed to actualize the potentiality of an artifact to be.

4. PRIME MOVER AND POTENTIALITY

This study has shown that potentiality from the point of view of development is a function of actuality, and that it is an immanent and telic function. Potentiality statically considered is a "passive" capacity requiring an external agent to actualize it. From the dynamic point of view the Prime Mover is pure actuality and the goal of all becoming; from the statical point of view he is pure form and the apex of the pyramidical hierarchy of existents. Logically he is demanded by the hierarchical conception; dynamically he serves as the cause of becoming, since all becoming is a movement from potentiality to actuality. In this sense he is the final cause, the unmoved mover. But what is the ultimate efficient

36. Met., XII,iii,2(1070a, 7ff.).

cause, for a final cause depends on efficient cause to attain its goal?

That the movement from potentiality to actuality needs an efficient cause seems to be recognized by Aristotle. This ultimate efficient cause must be a complete reality, the first of all things, for "that which is first of all things moves all things."[37] This is stated in a section where he is speaking of efficient causes. Again Aristotle rejects the infinite regress for "if there is no first term there is no cause at all."[38] The priority of actuality also shows that an actual reality is needed to initiate movement. The Prime Mover is such a reality, for "that which is first in complete reality is the cause of all things."[39] But how does this efficient cause work? "Unless a cause actually functions, there will be no motion,"[40] yet the Prime Mover is unmoved. Aristotle tries to meet this by an appeal to celestial mechanics. Stars have souls. These souls desire God and to attain perfect actuality. To do so they start the celestial bodies rotating. The movement of one sphere affects motion in all spheres. The rotation of the sun controls generation on the

---

37. Met., XII,iv,8(1070b, 34f.).

38. Met., II,ii,4(994a, 19f.).

39. Met., XII,v,6(1071a, 35f.).

40. Met., XII,vi,3(1071b, 19).

earth.[41] The Prime Mover is thus the final cause and the heavenly souls (stars) are the efficient cause of generation. Although such a view reconciles the demands of final causation and efficient causation, it does so by sacrificing the teleology of things on this earth. As far as this earth is concerned it is mechanically determined by the rotation of the sun. The penetrating organic and telic aspects of becoming are next to obliterated, if we consider the above interpretation as ultimate. On the other hand to consider all becoming as an unconscious immanent desire in things to attain full actuality is not very illuminating. What does unconscious desire mean? Can any meaning be attached to unconscious purpose? On the basis of this study it seems that the telic view is, in spite of its difficulty, truer to the genius of Aristotle. Certainly this is so on the basis of the Metaphysics. But on either view the Prime Mover has lost contact with the world, though the world has not lost contact with him. He is neither an immanent efficient cause nor a transcendent efficient cause. Under these circumstances Aristotle either appeals to an unconscious desire of things to attain greater actuality and less potentiality (his usual view), or to an efficient causation by celestial souls and its accompanying mechanistic causation. Thus all efficient

41. Ross, ARI, 181.

causation is on the part of the world in one sense or the other. This reduces to the strange paradox that actuality (Prime Mover) does nothing, whereas potentiality (the material world) does everything.

Again, all generation presupposes matter or potentiality. But pure potentiality is an abstraction (as is pure matter). Reality can neither be built up from, nor limited by, abstractions. Since actuality is the metaphysical ultimate (Prime Mover) and is prior to potentiality, then whence the potentiality of things, for abstractions, as was said, neither build up nor limit realities? Potentiality is often referred to as a limitation of actuality, but how did such a limitation come about in the first place since actuality is prior to potentiality? In one passage Aristotle seems to suggest that the Prime Mover is the cause of infinite potentiality "for it causes motion for infinite time and nothing finite has infinite potentiality."[42] The meaning, however, is not absolutely clear and being the only reference to such a thought it must not be pressed too far, especially since it does not harmonize with the idea of the Unmoved Mover. The Prime Mover is unmoved and undeveloping, and ultimate potentiality (pure potentiality, pure matter) is an abstraction, thus whence the power of development? Aristotle recognizes that we need the concept of potentiality in order

---

42. Met., XII,vii,12(1073a, 3ff.).

to show that change is not haphazard, but he gives no satisfactory account either of the metaphysical basis of potentiality or of its metaphysical implications. In view of his excellent analysis of the concept in nature, this lack is all the more regretable. (The Prime Mover, of course, is the metaphysical ultimate of actuality.)

II. KANT

From the epistemic point of view potentiality is the aspect of a developing thing in prospect, and actuality is the aspect of that thing in retrospect or in the present. This inquiry has shown that the epistemic approach is to be found in Aristotle. Kant, who first made a thorough critical investigation of the knowledge situation, deals with the epistemic meaning of possibility. There are characteristic differences between his treatment and that of Aristotle. Kant does not deal with potentiality as such but with the larger problem of possibility (Möglichkeit). Aristotle looked on potentiality as a way of defining things. An individual thing is not defined until it is defined both in its potentialities and in its actualities. In dealing with modal possibility Kant was not interested in the potentialities of a thing as such, but rather in the epistemic meaning of the term "possible thing." That is, Kant's problem was to show the epistemic differences in knowledge situations where a

thing is known as a possibility, as an actuality, or as a necessity respectively. A more detailed statement of all this will be found in the section "Real Possibility." All that needs to be emphasized here is that with Kant Möglichkeit is an epistemic term. It does not refer to the objective potentiality of things, nor to objective possibility as such, but to what is implied subjectively when a knower entertains a thing as possible rather than as actual. In other words, how do the conditions of a knowledge situation in which a thing is entertained as possible differ from the conditions of a knowledge situation in which a thing is entertained as actual? The point is that the difference is not objective (in nature), but in the knowledge situation. The categories of modality "only express the relation of the concept to the faculty of knowledge."[43]

This inquiry will consider Kant's treatment of possibility (Möglichkeit) under four headings: (1) Logical Possibility, (2) Real Possibility, (3) Absolute Possibility, (4) Kant and Potentiality.

1. LOGICAL POSSIBILITY

By logical possibility (also called analytical possibility) Kant means a concept that "does not contradict itself."[44]

---

43. KrV, B266. (Kemp Smith's translation used throughout.)

44. KrV, B302.

Such a concept is logically possible because it is logically thinkable. A concept which contradicts itself is nothing and so is impossible.[45] Now the question is, what is the relation between logically tenable concepts and reality? Kant is primarily interested not in possible concepts but in possible things. Is a thing possible merely because its concept is possible? "It is, indeed, a necessary logical condition that a concept of the possible must not contain any contradiction" but is this "sufficient to determine the objective reality of the concept"?[46] Kant thinks not. Philosophy is not a matter of wild speculation, but an attempt to rationally interpret the world of experience. If it limits the possible to the logically consistent, it does so because only what is logically consistent can have any meaning for us. In other words our rational make-up is the criterion of intelligible possibility. Now Kant, consciously or unconsciously, takes this principle and applies it a step further. Since we are not only rational beings, but have also immanent principles by which we construct experience out of the given, then the possible is a "real possibility" for us when it conforms not only to our rational laws, but also to the conditions of our having experience at all. For us to talk of possible things

45. KrV, B348.

46. KrV, B268.

(not concepts) which could never possibly come within our experience for a priori reasons, is as barren as to talk of possible concepts which we could never logically think. "Real possibility," then, limits and surpasses analytical possibility.

2. REAL POSSIBILITY

Logical possibility is the thinkable. Real possibility is the experienceable. The category of possibility, then, as distinguished from logical possibility, applies only to what may enter the field of experience. "The employment of the categories can never extend further than the objects of experience."[47] This means that logical possibility applies to concepts, but real possibility applies to the objects of concepts or "things."

> For if they, the modal categories, are not to have a purely logical significance, analytically expressing the form of thought, but are to refer to the possibility, actuality, or necessity of things, they must concern possible experience and its synthetic unity, in which alone objects of knowledge can be given.[48]

In other words the concept is a real possibility if it refers to a possible thing. A concept is a logical possibility if it is thinkable (non-contradictory) whether its object is possible or not.

---

47. KrV, B308; cf. B266f.

48. KrV, B267.

When is a thing possible? A thing is possible if its concept is not only logically possible but also in conformity with the form and condition of experience in general. "The postualte of the possibility of things requires that the concept of the things should agree with the formal conditions of experience in general."[49] This means that the concept of a possible object must conform to the conditions of the "sensibility" and of the "understanding." "That which agrees, in intuition and in concepts, with the formal conditions of experience, is possible."[50] In other words the concept of a possible thing must not only be a consistent concept, but must conform to the conditions of space, time, and the categories.[51] The concept of a possible thing is thus a "synthetic" possibility, for "the objective form of experience in general, contains all synthesis that is required for knowledge of objects."[52]

Now a synthesis, for Kant, means the "act of putting different representations together, and of grasping what is manifold in them in one [act of] knowledge."[52a] Thus the content of concepts are always synthetic. Analysis cannot take

---

49. KrV, B267.

50. KrV, B265.

51. Paton, KME, 341: "We must, I think, take Kant to mean that an object is possible so far as it conforms, not only to space and time, but also to the categories."

52. KrV, B267.

52a. KrV, B103 (brackets are added by the translator, Kemp Smith).

place until the content is given, and the content is given only by a synthesis, a putting together. "It is to synthesis, therefore, that we first must direct our attention, if we would determine the first origin of our knowledge."[52b] There are three elements to any such synthesis:

> What must first be given . . . is the manifold of pure intuition [i.e. the forms of space and time]; the second factor involved is the synthesis of this manifold by means of the imagination. The concepts which give unity to this pure synthesis . . . furnish the third requisite for the knowledge of an object; and they rest on the understanding.[52c]

The condition of all this is the unity of consciousness, what Kant calls "the synthetic unity of apperception."[52d] In the synthesis of an empirical object, of course, the material elements of experience (sensations), enter into the content of the synthesis. The synthesis of these sensations in accordance with the above factors is an object. "An object is that in the concept of which the manifold of a given intuition is united."[52e] It must be remembered that the synthesis is not "read off," so to speak, but constituted by the mind. "We cannot represent to ourselves anything as combined in the object which we have not ourselves previously combined."[52f]

52b. Loc. cit.

52c. KrV, B104.

52d. KrV, B154.

52e. KrV, B137.

52f. KrV, B130.

Experience is constituted by synthesizing the given elements of sensations. How this synthesis can take place is a mystery, but that it must take place is an a priori necessity. An object is thus a synthetic possibility if it can be put together in accordance with the formal conditions of experience, i.e., space, time, the categories, and the unity consciousness. A concept of such an object is a possible concept.

It would seem, then, that any concept which meets the formal conditions of experience is a concept of a possible thing. Kant, however, does not rest with this conclusion. Not all concepts which meet the formal conditions of experience are concepts of possible things. Fictitious concepts, e.g. centaurs, that agree with the general conditions of experience do not have objects. To understand Kant here it seems adviseable to make a distinction between a possible synthetic concept and a possible thing. A possible synthetic concept is a concept that conforms to the formal conditions of experience. Now the question is, need such a synthetic concept refer to a possible "thing" or not? The concept of a centaur meets the formal conditions of experience and so is a possible synthetic concept, but it does not refer to a possible thing because a possible thing either belongs to experience or is implied by experience. Thus:

> a concept which contains a synthesis is to be regarded as empty and as not related to any object, if the synthesis does not belong to experience either as being derived from it, in which case it is an empirical concept,

> or as being a priori conditions upon which experience in general in its formal aspects rests."[53]

Objects of fictitious empirical concepts are consequently, ruled out. Only what is experienced or implied by experience is a possible thing. There are, then, three meanings, so far, of possibility: (1) logical or analytical possibility, (2) synthetic possibility, (3) possible things.

A possible synthetic concept that does not relate to objects of experience, or to what is implied by experience, is empty. It is idle to entertain it. But if only those possible synthetic concepts are to be entertained which relate to experience, what is the difference between a possible thing and an actual thing? What is experienced is, of course, actual, for if experience implies it, experience must depend on it and so it must of necessity be actual. Now the word "imply" has two meanings. It may mean that an effect implies its cause; or it may mean that a cause implies its effect. An actuality implies its cause as an actuality, but it implies its effect as a possibility. That is, the cause of an actuality must be an actuality, but the effect of an actuality is a possibility (potentiality). It would seem, then, that a possible thing differs from an actuality in that it is implied as an effect of actuality. This is the usual meaning of "real possibility." It is not, however, the Kantian

53. KrV, B267.

meaning. Kant calls this type of implication not modal possibility but necessity:

> Necessity concerns only the relations of appearances in conformity with the dynamical law of causality and the possibility grounded upon it of inferring *a priori* from a given existence (a cause) to another existence (the effect).[54]

What, then, is the difference between a possible thing and an actual thing, *as thing*? The answer is, "no difference." At first this sounds like a shocking conclusion, for a possible thing must certainly be different from an actual thing. Kant, however, insists that the difference is not *in the thing*:

> Through the actuality of a thing I certainly posit more than the possibility of it, but not *in the thing*. For it can never contain more in its actuality than is contained in its complete possibility. But while possibility is merely a positing of the thing in relation to the understanding (in its empirical employment), actuality is at the same time a connection of it with perception.[55]

"Real possibility," then, in the Kantian sense, means the concept of an experienceable thing. That is, the concept of a thing, as concept, is that thing as possibility. The distinction between "real possibility" and actuality is, consequently, the distinction between the concept of the thing

---

54. KrV, B280. The point is that Kant calls the "possibility" of inferring from causal laws "necessity" and not modal possibility. Modal possibility is thus different from this other type of possibility (which Kant calls modal necessity). This point will be developed as the argument proceeds.

55. KrV, B287n.

and the thing itself.[55a] The content of the concept, as concept, is the thing as possibility; the content of the thing, as thing, is the thing as actuality. The content of the two are, of course, the same. The difference is a difference of relationship to the knowing mind. The content of a concept is thought through the understanding (Verstand); the content of a thing is known through perception. When a thing is perceived, it is known as an actuality; when its concept is thought, it is known as a possibility. "For that the concept precedes the perception signifies the concept's mere possibility; the perception which supplies the content to the concept is the sole mark of actuality."[55b]

Thus when Kant speaks of "possible things," he does not refer to things that merely may exist, but are not known to exist; he refers, rather, to the concept of things that are to be found in experience. As far as things are concerned their possibility is attested by their actuality and in no other way. As Paton states it: "If we know that there are actual dogs in the world, we know that dogs are possible ...; and we cannot know that dogs are possible, except by knowing that they are actual."[56] But knowing a thing in actuality is, nevertheless, different from knowing it as possibility.

55a. That is, the phenomenal thing, not The Ding-an-sich.

55b. KrV, B277.

56. Paton, KME,II, 347. Paton, however, does not

When an object of a possible synthetic concept is thought about, it is possible. When it is implied by the mechanism of nature, it is necessary. In fact the mark of actuality is perception, but the test of actuality is necessity, for a perception not causally related to the mechanism of nature is an illusion. An actual thing is known as an actuality through perception, but the test of its objective actuality is its place in the mechanism of nature.

A possible thing, then, is an actual thing (or what is consistent with the actual), known conceptually. When it is known perceptually it is known as actuality. "That which is bound up with the material conditions of experience, that is, with sensation, is actual."[56a] It follows that the field of possibility, for Kant, is no wider than the field of actuality, as far as the empirical employment of the modal categories is concerned. The employment of categories beyond the field of possible experience, Kant, of course, does not allow. The existence of a thing may, however, be asserted if it is demanded by other factors in experience, though

(56 cont.) distinctly emphasize that a possible thing is an actual thing known as concept. The point of the interpretation here presented is that for Kant modal possibility does not mean possible inferences drawn from experience, but means, rather, a particular way of knowing either experience, or the conditions of experience. The inferences themselves are not possible but necessary, yet may be known either as possible (conceptually) or as actual (perceptually).

56a. KrV, B266.

there is no immediate perception of it. "Thus from the perception of the attracted iron filings we know of the existence of a magnetic matter [sic] pervading all bodies," though we cannot see it.[56b] It is to be noted, in this connection, that the objective existence of the thing, though an inference, is not a possibility, but a fact, for "the perception of it can, if need be, precede the concept."[56c] The reason the perception does not do so in the case of "magnetic matter" is that our senses are limited. "The grossness of our senses however does not in any way decide the form of possible experience in general."[56d] Magnetic matter is thus experienceable, though not experienced. Since it is experienceable and demanded by experience it has objective existence. Subjectively, however, it can be known only as a possibility. Should our senses become refined it would be known as actuality. In itself it is actual, not merely possible.

Real possibility, then, as a concept of the understanding is limited to experience. It affirms that the object of the concept is experienceable. When experienced, the object is subjectively actual for the knowing mind. When conceived, the object is subjectively known as possible. The modal

---

56b. KrV, B273.

56c. KrV, B272.

56d. KrV, B273.

category of possibility, thus, does not judge about the objective potentialities of things. The possibilities (potentialities) of actual things are judged by "the principle of their empirical connection (the analogies)."[56e] Because of the determinism of nature these "possibilities" (inferred by the use of the analogies) are known as necessities (in the modal sense). Objective potentiality is, thus, modal necessity. Modal possibility is the concept of an experienceable thing entertained only as concept (not being perceived).

3. ABSOLUTE POSSIBILITY

May not possibility have a wider meaning? May not the field of possibility be, consequently, larger than the field of actuality?[56f] Kant answers that as far as our human experience is concerned such possibility is impossible. Such possibility is thinkable but not knowable (experienceable).

> To <u>know</u> an object I must be able to prove its possibility, either from its actuality as attested by experience, or <u>a priori</u> by means of reason. But I can <u>think</u> whatever I please, provided only that I do not contradict myself."[56g]

The reason is that the conditions of human experience are what they are, and it is idle to talk of other types of possible experience. Nothing is possible (in any judicious use of

---

56e. KrV, B273.

56f. KrV, B282.

56g. KrV, Bxxvi,n.

the word) except what is possible in accordance with the conditions of possible experience.[56h] "Absolute possibility" is not a problem of the understanding (Verstand), but of reason (Vernunft).

Reason, however, can make no fruitful use of the category of possibility. It can form "ideas" that are analytically (logically) possible, but cannot assert their existence. The notion of existence cannot be added to a concept as an additional part of its content, for the categories of modality add nothing to the content of a concept. "They do not in the least enlarge the concept to which they are attached as predicates."[57] Reason (Vernunft) must form the "idea" of a most perfect Being, but cannot affirm the existence of this Being. The conceivability of a most perfect Being does not prove its actuality, for a concept is the same whether actual or possible. "If we attempt to think existence through the pure category alone, we cannot specify a single mark distinguishing it from mere possibility."[57a] The concept of a hundred thalers, for example, is the same, whether the hundred thalers be considered actual or merely possible.

Knowledge of the existence of things (and so of their

56h. KrV, B284.

57. KrV, B266.

57a. KrV, B629.

"real" possibility) can be had only from actual experience or its implications. Such knowledge of the actual is always, however, a synthetic knowledge. Now "the possibility of synthetic knowledge is never to be looked for save in experience."[57b] Logical analysis can give the "thinkable," but only experience (and its implications), can give the actual (the synthetically possible). "Ideas" of reason (Vernunft) are thinkable but not experienceable, and so can have no synthetic possibility. To put it differently, their possibility is thinkable but not knowable, and for Kant only what is knowable (or what are the a priori conditions of the knowable) is truly possible. The a priori conditions of experience are, of course, the categories of the Verstand, not the "ideas" of Vernunft. Thus the field of possibility is no wider than the field of experience. "Absolute possibility" is thinkable, but not knowable, and so is of no use in the interpretation of experience. All efforts expended on analysing "absolute possibility" are so much "Love's Labor Lost."

4. KANT AND POTENTIALITY

Real possibility, then, cannot be applied beyond the realm of experience and its conditions. The difference between a possible object and an actual object is not in the

57b. KrV, B630.

object, but in its relation to experience. When a "knowable" object is merely thought, it is possible; when perceived (or implied in perception) it is actual. Real possibility, thus, asserts only that an actual object may be subjectively perceived as well as thought about. It asserts nothing of the objective possibilities (potentialities) of the phenomenal thing itself. Aristotle was interested in the potentialities of things. Kant was interested in the different ways a thing may be known: as possibility (conceptually), as actuality (perceptually), as necessity (as effect of a cause). If in knowing an oak we relate it to an acorn as the effect of the latter, then the oak is known as a necessity. Instead of speaking of the potentiality of the acorn, Kant speaks of the oak known under the category of necessity. To say, however, that the oak is a necessity relative to the acorn is just another way of saying that the acorn is a potential oak. Potentiality and necessity are, thus, different ways of viewing the same process. Considered from the point of view of the beginning, the process is viewed as potentiality; from the point of view of the end of the process, it is necessity. Necessity is potentiality seen in reverse. As such, however, necessity becomes a theory about the nature of potentiality. It claims that potentiality can be explained only mechanically. These conclusions are not drawn by Kant, but are consistent with his principles. Indeed, if the interpretation of Kant's

theory of modal categories here advanced is correct, these conclusions are implied in Kant.

This interpretation of Kant, furthermore, leads to the paradoxical conclusion that necessity is related to objective potentiality, but possibility is not. Since a "real possibility," for Kant, is only the concept of an experienceable thing, it asserts nothing, as has been shown, of the thing's objective potentiality. There is a sense, however, in which the Kantian concept of real possibility involves potentiality. It is not the objective potentiality of things, but the contextual potentiality of a knowledge situation. That is, an object which is now only known conceptually (as possible) may later be known perceptually (as actual). The reason the conceptual knowledge is considered knowledge of a "possible thing," is that the elements in the knowledge situation are such that they may enter into a perception. Sould the knowledge situation be such that no perception of the thing could ever be possible, then the concept would not be a concept of a "possible thing." A context, thus, in which a thing is known conceptually only, is a context revealing a "possible thing," if it is potentially a perceptual context (or if it is logically implied by experience, of course). Though this interpretation is not given by Kant, it is, nevertheless, suggested by the following:

> Through the concept the object is thought only as conforming to the universal conditions of possible empirical

> knowledge in general, whereas through its existence it is thought as belonging to the context of experience as a whole.[57c]

There is, moreover, a sense in which the Ding-An-Sich is also potentiality. Kant undoubtedly thought of it as an actuality, but Hegel is right in showing[57d] that a "thing-in-itself" can only be a potentiality,[57e] for the actuality is what the thing is concretely. The concrete thing is the thing in a situation that includes the thing and its entire context, including its being known. These relationships are what make the thing what it actually is. "In itself" the thing is an abstract potentiality.

Logically, possibility means thinkability. "Critically," possibility means the experienceable entertained conceptually. Empirically, potentiality means causal necessity seen in reverse. Metaphysically, potentiality is the Ding-An-Sich. Epistemologically, potentiality is the contextual possibility of a conceptual knowledge situation becoming a perceptual knowledge situation. The last three conclusions are not drawn by Kant, but may logically be deduced from Kant, either by the use of his principles or by the demands of the nature of the problems involved.

57c. KrV, B628,29.

57d. SP:L, sec. 124.

57e. So also in Aristotle formless matter is potentiality, but only "formed" things exist (are actual).

III. HEGEL

Hegel is the philosopher that deals with process and becoming, with evolution and dialectical development. Hegel thus must concern himself with potentiality. The dialectical movement presupposes it. In fact Hegel not only concerns himself with, but goes far towards resolving the antithesis between, actuality and potentiality. In place of abstract matter and form, of potentiality and actuality, he has the Absolute Idee, the concrete universal, that embodies in actuality all that proceeds out of itself (its "objectivity") as potentiality.

There are two aspects of Hegel's contribution to the category of potentiality. One aspect has to do with the concept of potentiality as implied in the Hegelian system. This is the richer aspect and stands comparison with Aristotle. The other aspect concerns what Hegel had to say about Möglichkeit. This is the more formal aspect and is based on, but transcends, Kant's treatment of possibility. This study will deal with both aspects, and will consider the relation of Hegel to Aristotle and Kant under the appropriate section.

1. POTENTIALITY AND THE HEGELIAN SYSTEM

Explanation for Aristotle meant causal explanation. In causal explanations the temporally prior explains the

temporally posterior. Now this created difficulties for Aristotle's doctrine of potentiality, for causally actuality had to be prior (priority of actuality), but logically potentiality had to be prior. Aristotle never reconciled these two positions. He held on to the concept of potentiality but never gave it adequate metaphysical support. It remained a logical concept drafted to perform a causal function.

With Hegel explanation was rational rather than causal. A thing is explained when all relevant logical grounds and relations and consequences are given. Reason (rational ground) and consequent take the place of cause and effect. Potentiality thus becomes the logically "implicit" and actuality the logically "explicit." Development is the implicit becoming explicit. Reason is not static but a process. Subjectively it is reasoning. Logic, however, is objective as well as subjective, for Reason is the first principle of the world.[58] A logical explanation is thus a metaphysical explanation. The Idee is implied by all the categories and it, in turn, includes them all. Since the categories describe the Absolute, then the logical implications of the categories provide the only way metaphysics can be rationally understood. The logically implicit is the metaphysically potential.

This, however, is true only of Hegel's concrete logic.

---

58. Wallace, LOH, 294. "Things are what they are through the action of the notion, immanent in them, and revealing itself in them." (The references to Hegel's works are made by giving the name of the English translator.)

It is obviously not true of formal logic. The concrete logic is based on experience because metaphysics is based on experience.[59] The categories are the noetic framework of metaphysics because they are the rational framework of our experience. Should experience not conform to these categories, they (not experience) would be invalid. The higher categories are "implicit" in the lower categories because the lower categories are more "abstract" (have less determination); the higher categories, however, are not always logically "deduced" from the lower categories, but are often arrived at by considering empirical experience. For instance, to use an empirical illustration, the concept "oak" is implicit in a "concrete" definition of an acorn, but this concept of oakness is not "deduced" from the concept acorn. It is discovered belonging to the definition of acorn only through experience. The "implicit" can thus mean the "potential" only in a "concrete" logic where deduction goes hand in hand with experience and both are seen against the richness of relationships. The an sich is the potential because more relationships and determinations are possible for it, or because it can lead to richer experience. It is potential because more is forthcoming.

---

59. Dr. Brightman (vs. Stace) interprets the Dialectic as a search for empirical hypotheses, a process of bringing in empirical relations to form new hypotheses. From Dr. Brightman's point of view the Phenomenology, not the Logic, is the key to the Hegelian spirit.

In Hegel's concrete, metaphysical logic, then, the potential, the an sich, contains its determinations in itself, i.e. implicitly. Actuality is für sich. It contains its determination explicitly, for itself. Each step in the dialectic contains the former step für sich (explicitly, actually) and the next step an sich (in itself, potentially). Carrying this to its logical conclusion Hegel shows that Being contains the Notion (Begriff) implicitly, and that the Begriff contains Sein explicitly. "Being therefore is the notion implicit, before it has been explicitly put as a notion."[60] The Absolute Idea, "the pure form of the notion,"[61] is the final deduction. It "contemplates its content as its own self. . . This content is the system of Logic."[62] The Idee is the actuality of potentiality, and the potentiality of actuality, thus removing the dualism of the actual and the potential. They are metaphysically one in the Absolute.

As Hegel points out[62a] there is a close resemblance between Hegel's Absolute who "contemplates its content as its own self," and Aristotle's Prime Mover whose activity is pure self contemplation. In spite of the resemblance there is, nevertheless, an important difference. Aristotle's Prime Mover is separated from the world. His contemplations do not

---

60. Wallace, LOH, 376.

61. Ibid., 374.

62. Loc. cit.

62a. PM, 316.

include the potentialities of the world. He is thus "abstract" in the Hegelian sense. The Absolute, on the other hand, is "concrete." The content of his contemplation is the whole system of logic. It is in him that the potentialities of the world "live and move and have their being."

2. HEGEL'S CONCEPTION OF MÖGLICHKEIT

Kant distinguished logical possibility from "real" possibility. Möglichkeit in the logical sense applies to the non-contradictory. "Real" possibility applies to whatever conforms to the conditions of experience in general. Hegel accepts from Kant this division of Möglichkeit into formal and real but gives the terms a different content. As Kant's critique advanced beyond logical possibility to consider the meaning of possibility in terms of the conditions of our experience, so Hegel's dialectic advances beyond the critique to show the meaning of possibility in terms of the concrete whole of experience and reason. For Kant a "real" possibility is what may be experienced; for Hegel a real possibility is what coherently belongs to a given situation taken as a whole. When Kant considers the content of concepts abstractly (in isolation) he can see no difference between a hundred real dollars and a hundred possible dollars. But when he considers the difference in relation to "the context of experience as a whole"[62b] he sees that actuality makes a difference. Hegel

62b. KrV, B629.

insists on considering Möglichkeit in just such relations, for it is there that it makes a difference. For Hegel the categories are not just principles of the Verstand, but are ontological principles as well.

i. FORMAL POSSIBILITY AND CONTINGENCY

In order to understand what Hegel means by Möglichkeit it is first necessary to understand what he means by Wirklichkeit. Actuality is the union of "essence" and "appearance." Thus actuality is the synthesis of the Wesen book. Essence is the "inner," the ground of existence. Existence is the appearance of essence. Appearance is the outer, the forth-shining of essence. Thus "the appearance shows nothing that is not in the essence, and in the essence there is nothing but what is manifested."[63] Actuality is the category of this union of essence and appearance. It is the truth of the two.

Actuality being a concrete category includes the union of inner and outer, and also their difference.[64] The inner seen now from the point of view of actuality becomes possibility; the outer becomes contingency. Possibility is the essence "lifted out of reality," an abstraction.[65] The essence in re-

---

63. Wallace, LOH, 252.

64. Ibid., 259: "Such a concrete category as Actuality includes the characteristics aforesaid and their difference."

65. Wallace, LOH, 260: "Possibility is really the bare abstraction of reflection -into- self, -what was formerly called the Inward, only that it is now taken to mean the external inward, lifted out of reality and with the being of a bare supposition."

lation to appearance is ground, in relation to actuality it is possibility. Possibility, however, is only the "form" of essentiality. "Possibility and Contingency are the two factors of Actuality, --Inward and Outward, put as mere forms."[66] Now as essence is, in one of its moments, self-identity, so possibility, as the form of essence, is "the mere form of identity-with-self."[67] In this sense of possibility everything is possible which is not self-contradictory. Such a concept is not very fruitful, for any nonsense may be conceived as a possibility, no matter how improbable it is. Again on this basis everything is impossible "for every content (a content is always concrete) includes not only diverse but even opposite characteristics."[68] (Matter, for example, is "the unity of attraction and repulsion.") The possibility or impossibility of a thing depends rather upon its relation to the totality of reality. Kant and Hegel thus both discard formal possibility as a philosophical principle.

As the inner, from the point of view of actuality, is possibility, so the outer is, from the same point of view,

---

66. Ibid., 263.

67. Ibid., 260.

68. Ibid., 262.

contingency. Hegel bases this deduction on the conclusion that "what is only internal is also only external: and what is only external, is so far only at first internal."[69] Since the inner is possibility, then the outer is likewise possibility. But this is the possibility not of essence, but of existence. As such it is contingency. Contingency is the form of existence, as possibility is the form of essence. Contingency, thus, is not only the form of self-identity, but also "has its ground...in somewhat else" (as existence has its ground in essence).[70] Having its ground in "somewhat" else, the contingent is dependent and so either may or may not be.

ii. REAL POSSIBILITY AND NECESSITY

The concept of the contingent moves on to the concept of real possibility, which Hegel uses in a different sense from Kant. For Kant real possibility means conformity with the conditions of experience. For Hegel real possibility means the presence of the sum total of conditions necessary to actualization. To understand real possibility the contingent must first be seen as "the condition."

The contingent implies the condition, for since the contingent is what may be only in relation to that on which it depends, that on which it depends is the "condition." From another point of view the contingent, in an interrelated

---

69. Wallace, LOH, 252.

70. Ibid., 263.

system, is itself also the condition of something else. In its relation to others it is contingent, in the relation of others to it, it is condition. The condition, moreover, as being the possibility of something else is an existing possibility. A contingency, because it is a contingency, may not be; but a condition, to be a condition, must be. "By the condition of a thing we mean first, an existence."[71] The contingent, thus, depends on its condition, and when it becomes an existent it in turn becomes a condition.

The concept of the condition leads to the concept of real possibility, because real possibility means the presence of all conditions necessary for actuality.[72] When "all the conditions are at hand, the fact (event) <u>must</u> be actual."[73] Real possibility is not only what can become actual, nor what does become actual, but what must become actual. Thus real possibility leads to necessity, the union of possibility and actuality.

In this process from real possibility to necessity there are three elements: "the Condition, the Fact, the Activity."[74] These elements are abstract aspects of the

---

71. Wallace, LOH, 266.

72. Hegel's deduction of real possibility is based on the two aspects of condition: existence and possibility, an existent in itself and a possibility for something else. Real possibility is the synthesis of these two aspects. Loc. cit.

73. Ibid., 267.

74. Ibid., 271.

concrete actuality. As aspects the conditions, the fact, and the activity are each considered to be prior to the necessary actualization. The conditions are the passive materials for the fact and enter into its content. They are conditions because they can so enter into the fact. The fact is the actual result considered abstractly, by itself. It becomes an existent by using up the conditions, from which it proceeds. The activity is "the movement which educes the fact from the conditions in which it is potentially present,"[75] thus abolishing the conditions by transforming them into the fact. Necessity results, then, when an actuality (fact) is viewed in relation to both its conditions and the activity that educes the fact from the condition. When thus viewed a necessity is relative, for it depends on its antecedents. It is thus a dependent or a contingent. True necessity, however, must contain its conditions within itself. It derives from its antecedents but includes them in itself as part of itself (though of course in an altered form). This view of necessity, as containing its conditions within itself, is the concrete view. It gives "absolute necessity."[76]

---

75. Ibid., 272.

76. This term is used in the "larger logic" (Johnston, SOL, II, 183ff.), but the idea is present in the smaller logic also: "anything necessary accordingly comes before us as something due to a supposition, the result of certain antecedents. If we go no further than mere derivation from antecedents however, we have not gained a complete notion of what necessity means. What is merely derivative, is what it is, not through itself, but through something else; and in this

Necessity so viewed is nothing but an exposition of the Absolute. As Hegel puts it: "That, however, which expounds the Absolute is Absolute Necessity which is self-identical as being self-determining."[77] The Absolute, then, is the one true embodiment of necessity. Necessity being the union of potentiality and actuality, the Absolute, therefore is the metaphysical basis of potentiality, of actuality, and of the actualization of potentiality. But what content shall begiven to this metaphysical basis? What does absolute necessity reveal about the metaphysical relationship of potentiality and actuality, of condition and result? Hegel's answers are given in the next subdivision of this study.

iii. METAPHYSICAL IMPLICATIONS

There are three metaphysical theories that are intended to explain the relationship of potentiality to actuality, of condition to result. Hegel calls them: "(a) The Relationship of Substantiality," "(b) The Relationship of Causality," "(c) Reciprocity or Action and Reaction."

(1). Substance. Absolute necessity takes the relationship of substance and accidents because substance is

(76 cont.) way it too is merely contingent. What is necessary, on the other hand, we would have be what it is through itself; and thus, although derivative, it must still contain the antecedent whence it is derived as a vanishing element in itself. Hence we say of what is necessary, 'It is.' We thus hold it to be simple self-relation, in which all dependence on something else is removed." Wallace, LOH, 267f.

77. Johnston, SOL, II, 187.

"the totality of the accidents, revealing itself in them as their absolute negativity, (that is to say, as absolute power)."[78] Substance then reveals itself in its accidents yet is the power of these accidents. These accidents reveal substance yet are vanishing elements in substance. The accidents are the content of substance, substance is their "form activity."[79] But on such a view no reason is given why the actuality (the accidents) should be considered as the content of substance (the possibility). A substance has as content a certain accident, but substance itself (abstractly considered) is mere power or possibility, thus why should it have as content <u>this</u> particular fact or actuality? Substance as defined does not explain "this." Substance is mere possibility and mere possibility cannot explain definite particular actualities. Causality is an attempt to give such an explanation.

(2). Causality. In the relationship of cause and effect, the effect is what it is because of the cause. At the same time the effect contains the cause: "there is no content in the effect that is not in the cause. . . [in fact] it is in the effect that the cause first becomes actual and a cause."[80] The effect is thus a necessary actuality, for it must reveal the cause. It is <u>this</u> actuality because the cause

---

78. Wallace, LOH, 274.

79. Loc. cit.

80. Opus cit., 277.

was <u>such</u> a possibility. But the necessity is, at first sight, only in the effect. The cause seems to be an unexplained fact. If a causal explanation of every cause is attempted, the attempt ends in the infinite regress. A little reflection, however, shows that more is involved in the causal relation. As was intimated above, the cause first becomes actual in the effect. The cause depends upon the effect for being a cause. But even more is involved. If a cause is to produce an effect, the cause is to be the active substance which works on the "passive" substance "on which the effect takes place."[81] But this latter, being substance, is active also and so reacts on the first substance. This is reciprocity.

(3). Reciprocity. In reciprocity the distinction between cause and effect breaks down. Both sides are causes and both are effects, for in reciprocity they so interact that each receives from the other, and each gives to the other. The effect is the result of action and reaction. Reciprocity is thus "the proximate truth of the relation of cause and effect."[82] As such, reciprocity "is the consummation of Substance. But this consummation is no longer Substance itself, but something higher--the Notion, the Subject."[83] Substance is thus overcome. The Notion takes its place. The Notion is the seat of potentiality and actuality. The Notion is the

---

81. Wallace, LOH, 279.

82. Ibid., 281.

83. Johnston, II, 214.

development of potentiality into actuality. The Notion is thus the in-and-for itself, das-an-und-für-sich, the potentiality, the actuality, and the process of development.

Potentiality and Actuality are united in Necessity. The relation of substance and accidents is a metaphysical aspect of this synthesis. But the truth of Substance is the Notion and the truth of Notion seems to be Spirit. This last step cannot be elaborated here beyond a quotation from the Phenomenology: "Everything depends on grasping and expressing the ultimate truth not as Substance but as Subject as well."[84]

In Hegel, then, the thing "in itself" is the thing in potentiality. It is the essence or ground of the actual thing. But the possibility of its becoming actual is real (genuine) if it is in proper relation to the rest of reality. Potentiality, therefore, is a term applicable to the thing "in itself," abstractly considered. "Real possibility" is a term applying to the availability of all the conditions necessary for the actualization of a thing. Real possibility thus refers to the whole context in which the potentiality must be present in order to become an actuality (the potentiality itself, of course, being part of the whole context). When all the conditions are present the potential becomes actual. In fact as long as all the conditions remain present actuality is a necessity.

---

84. Baillie's translation, POM, 15.

In truth, however, the concrete actuality is not this resultant fact, but the whole process. Potentiality and "actuality" are abstract aspects of one <u>concretely</u> actual process. Hegel and Aristotle, thus, both consider the whole process as the real thing. The analysis of the process as made by Hegel may also be compared to Aristotle's. Hegel analyzes the process into condition, fact, activity. Aristotle has δύναμις, ἐνεργεία, ἐντελέχεια. The ἐνεργεία is the Hegelian "activity" by which the potential becomes actual. The Hegelian "condition" is the Aristotelian δύναμις, with the exception that Hegel includes the total context in the condition; Aristotle's δύναμις describes just the main (or decisive) element. What Hegel calls "the fact" is Aristotle's ἐντελέχεια. It is the final (resultant) stage of the process.

The great difference between Aristotle and Hegel is not so much that Hegel considers the total context as real possibility and Aristotle discusses the potentiality of the one decisive element in the context (e.g., acorn is the decisive element in the context acorn, soil, water, temperature); but rather that with Hegel the resultant actuality contains its conditions within itself, whereas with Aristotle the actuality transcends the condition. In Aristotle the "man puts away childish things," but in Hegel the man carries the child along with him. Aristotle thus has the dualism of Po-

tentiality (Matter) and Actuality (God) as explanatory principles of the world. Since God, however, transcends all potentiality, this principle is left without any metaphysical support. In Hegel the Absolute is the actuality which contains all potentiality, for the actual contains the potential within itself. To state all this in Aristotelian terms, it can be said that the Absolute is the metaphysical basis of δύναμις (potentiality), ἐντελέχεια (actuality), and ἐνέργεια (the activity that actualizes the potential). The world process is thus the self-determination of the Absolute Spirit.

IV. WHITEHEAD

In Whitehead's metaphysics, the Primordial Nature of God constitutes the conceptual realm of potentialities (eternal forms), and actual entities constitute the temporal realm of actuality. It is a philosophy of organism because the movement of "creativity" is the movement by which the eternal objects (forms) enter into ever new and cumulatively related actual entities. Each new actual entity being both a new creature and a new unification of the world, the system may be called "organic pluralism," for the individual entities are the ultimate real things, yet are in organic relation to, or (to use Whitehead's terminology) prehend, one another, and so involve each other. The creative advance of these actual entities is the ordered process by which these entities take

up the relevant factors of other entities and the relevant possibilities of eternal forms into themselves to create new entities. This is the advance into "novelty." These novelties are real because possibility is real. The reality of possibility is found in the realm of eternal objects (forms). These are the "pure" or "general" potentialities. The relevancy of any of these general potentialities for any actual entity is conditioned by the "given" world of any actual entity. This "given" world defines the "real" potentiality of any actual entity, and consists of the nature of the actual entity and its relations or environment.[85]

In contrast to Kant and Hegel the realm of possibility is, for Whitehead, wider than that of actuality. Not only is the realm of "pure potentialities" wider than that of actuality, but each "real" potentiality points beyond the actual, since it has one or more relevant eternal objects which it may select in its advance into novelty. --In contrast to Aristotle, Whitehead gives potentiality a firm metaphysical basis. The "Primordial Nature" of God is the realm of potentialities. This Primordial Nature corresponds to the Prime Mover of Aristotle, but with the important difference that Aristotle's Prime Mover is pure actuality, whereas the Primordial Nature of God is pure potentiality. In Aristotle, the Prime Mover was the metaphysical ultimate of actuality. In Whitehead,

---

85. PR, 101.

the Primordial Nature is the metaphysical ultimate of potentiality.

The following investigation will consider Whitehead's treatment of potentiality under three headings: 1. Pure Potentiality; 2. "Real" Potentiality; 3. Potentiality and Actual Entities. Under (1) will also be considered the Primordial Nature; under (2) the "Consequent Nature;" and under (3) some implications of "relevancy" as applied to the relation between eternal objects and actual entities.

1. PURE POTENTIALITY

The ultimate category in Whitehead's system is that of "Creativity."[86] Creativity is the ultimate category because it is the most universal characterization of the process of integration and of the appearance of novelty. Creativity, thus, is not ante res but in rebus, it "is found in the creature."[87] It is not a cause (productive cause) of the world, but an explanation of it, for "creativity is the universal of universals characterizing ultimate matter of fact."[86] It is characterless, the pure form of activity, the abstract notion of actuality.[88] Being such an abstraction (or generality),

---

86. PR, 31.

87. Whitehead, Art.(1926),61 (italics mine). In PR it is stated thus: "It lies in the nature of things that many enter into complex unity." (31) (italics mine.)

88. PR, 47.

it is never found by itself, but always under the conditions of the actual world. Consequently "there is no meaning to 'creativity' apart from its 'creatures'."[89] Creativity is to be made definite, to be given some determination, to become a created fact, if it is to be effective. This primordial "created" fact is the "primordial nature" of God. It is the "eternal primordial character," the "aboriginal instance of this creativity," the first actuality, for "it is the function of actuality to characterize the creativity."[90] Creativity is not willed by God, rather God is the eternal, primordial character of creativity. What this seems to mean is that God is the concrete category of creativity.[91] His nature is creativity in actuality. He does not will creativity; He is creativity. As such he is not the transcendent cause of the world, but the immanent creativity in the world. But creativity is the principle of novelty. Thus God is the concrete factor of novelty. He is this because his primordial nature is the "conceptual valuation" of the realm of eternal objects.[92] Eternal objects are "pure potentials." Eternal objects are

---

89. PR, 344.

90. Loc. cit.

91. If this interpretation is correct, then the problem raised by Miss Emmet as to how creativity first limited itself so as to act to create God, is a false problem, for "creativity" is the abstract category and "God" is the concrete category of one and the same principle. Cf. Emmet, WPO,247ff.

92. PR, 46.

not the only condition of novelty. The given world is another condition. Nevertheless eternal objects are the only source of novelty. Acorn, plus water, plus chemicals in the soil, plus temperature, plus time are the conditions of an oak, but not the only conditions. The possibility of oakness is another condition. But since oakness is not present in either acorn, water, chemicals, temperature, or time, then oakness is the source of novelty in the other conditions. Now the other conditions are actual entities, but oakness is an eternal object, a universal. Potentialities are thus universals, Platonic forms, or eternal objects. "Eternal objects, as God's primordial nature, constitute the Platonic world of ideas."[93] But this needs qualification, for Whitehead seldom, if ever, accepts another's terms without some modification.

It is not the purpose of this inquiry to go into a detailed exposition of the resemblances and differences between the Platonic Forms and Eternal Objects.[94] It is necessary to state that there are differences, so that there will be no initial misunderstanding. Having made the statement, it is only necessary henceforth, to proceed with the exposition of Whitehead's position, making, perhaps, occasional comparisons with Plato.

---

93. PR, 73.

94. Miss Emmet has done this in WPO, chapter 5.

An eternal object is a pure potential, a form of definiteness for the specific determination of fact.[95] Being a mere possibility it can be described "only in terms of its potentiality for 'ingression' into the becoming of actual entities."[96] A mere potentiality, however, cannot affect a process, for the "ontological principle" states that only actual entities can condition the process of becoming.[97] Eternal objects attain the status of actuality by being envisaged by the primordial nature of God. It is this conceptual realization of the eternal objects by God, that places them under the "categories of existence." What this seems to mean is that all potentialities are in God. God is not only the actuality of creativity, but also the actuality containing (conceptually) all possibilities. God is the activity that can create novelty.[98]

Though God can create novelty in the world, there are "no novel eternal objects."[99] All possibilities are once and for all in the primordial nature of God. Thus novelty comes not from new possibilities, but from new "ingressions" of

---

95. PR, 32.

96. PR, 34.

97. PR, 36.

98. This interpretation follows from the interpretation already given relative to God and creativity.

99. PR, 33.

these possibilities in different actual entities. God's primordial nature organizes the eternal objects relevant to the actual entities of the temporal order.[100] This is necessary or there would be no order of nature. If any actual entity could become any possibility the world would be chaos. For this reason, "each eternal object has a definite, effective relevance to each concrescent process."[101] What, however, makes one possibility relevant and another irrelevant? Is it a fiat of God consistently held to, so as to become a law of nature, or is it a situation arising in the temporal process of the world itself? Whitehead implies that it is the latter. This situation he calls "real potentiality."

2. REAL POTENTIALITY

God gives order to the eternal objects and offers the actual entities relevant possibilities. The relevancy of these possibilities is determined by the given conditions of the situation. This given situation:

> Is a limitation laid upon the general potentiality provided by eternal objects, considered merely in respect to the generality of their natures. Thus, relatively to any actual entity, there is a 'given' world of settled actual entities and a 'real' potentiality, which is the datum for creativeness beyond that standpoint. This datum. . . is nothing else than the actual world itself.[102]

---

100. Ibid. 63f.

101. Ibid. 64.

102. PR, 101.

God then is the depository of all potentialities and the selector of relevant possibilities, but his selections are "real," (that is, acceptable) only if they conform to the nature of the situation. The situation is the given world, rather than the actual entity taken by itself. The philosophy of organism considers each entity in its relations. As far as an entity's own nature is concerned several possibilities could be relevant to it. But of these only one is accepted. This accepted one is the "real" possibility and is selected because of its relevancy to the total situation.[103] Eternal objects are first limited by the nature of the entity itself, and then finally selected by the situation in which the event finds itself.

The selection, however, is a free selection. In this sense every actual entity is a "decision." "By actualising one, it excludes other alternatives."[104] It selects on the basis of its subjective aim. This is the free internal purpose, or the structure of its internal nature. As it comes in contact with other entities in the history of its development, its selections are progressively determined by the influence of these other elements, but ultimately "each concrescence is to be referred to a definite free initiation and

---

103. PR, 34.

104. Emmet, WPO, 114.

a definite free conclusion."[105] The initial fact is an "appetition" which in its final fact is the "satisfaction," the entelechy. The concept is teleological. But if freedom is to be genuine, God must hold out more than one possibility to actual entities. At the beginning, in the stage of greater indetermination, the potentialities are greater; in the final stages the potentialities are more limited. God, morever, not only presents relevant possibilities, he also tries to persuade the occasions to make the proper choice. But being "choices," the actual occasions are free to reject God's persuasions.

God's persuasions are those of love. He is the object of desire in "the initial phase of each subjective aim."[106] But the actual entities are free to disregard this initial impulse, and all other persuasions of God. If they do disregard his attempts at persuasion, then he does not combat them:

> God's role is not the combat of productive force with productive force, of destructive force with destructive force; it lies in the patient operation of the overpowering rationality of his conceptual harmonization. . . He is the poet of the world, with tender patience leading it by his vision of truth, beauty, and goodness.[107]

---

105. PR, 75.

106. PR, 522. Note resemblance to Aristotle's Unmoved Mover.

107. PR, 525f.

"Real" potentiality, then, has two aspects. (1) It is the "subjective aim" of the entity itself. (2) It is the total situation into which the entity has entered, or the given concrescence of that entity. There thus seem to be two ultimate types of actual entities. (1) God, who is the mental pole of the world, and (2) temporal entities, which form the physical pole. As entities, both types are ultimate facts. Yet both are related, for God desires to save the world and to attain complete actuality, so he "objectifies" the actual occasions in his "consequent" nature. The actual entities, desiring God, move towards him in their choices of possibilities. God, nevertheless, is the principle of order and novelty; he takes brute fact and transforms it through the persuasive love of his rationality. "The world" is the process of this transformation.

3. POTENTIALITY AND ACTUAL ENTITIES

The temporal world process is the actualization of potentialities. In fact potentialities had to be actualized in some fashion primordially. The primordial nature of God is this eternal actualization. But it is not a complete actualization. It is only a conceptual realization and needs the creative process of novelty to give it actualization in the temporal world. These temporal actualizations are objectified in the Consequent Nature of God. Potentialities thus have their eternal seat in the mental pole. In them-

selves they are abstractions. In things they have only a consequent reality. The mental sphere is its true abiding place.

"Things," or actual entities (to be exact) would remain static were it not for potentialities. An actual entity can proceed to novelty only by envisaging eternal objects. But how can this be? To say that God presents the relevant possibility is not sufficient. The possibilities must somehow be incorporated by the actual entities. The acorn may have the possibility of oakness presented to it, and all the conditions may be ready for the "ingression," but still nothing would happen unless there is some activity that welds the two together, that makes the "ingression" not only possible, but actual.[108] But whence this activity? It cannot come from God or from the actual entity. God does not use force on the entity, so the entity must reach out for the possibility itself. If, out of the many relevant possibilities that God presents, the entity picks out one, it must be because it has an affinity (either mental or physical) for that possibility. In fact that is why that possibility is relevant, because there is an affinity for it in the entity. But in that case we duplicate the possibility, for to have an affinity for a

---

108. Hegel saw the truth of this and so had the three factors in necessity: the condition, the fact (i.e. the eternal object), and the activity. Cf. above, 61f.

potentiality means that the potentiality is part of the nature of the thing. The reason an acorn becomes an oak rather than a pup is due as much to the nature of the acorn as to the eternal object oakness. The term "relevant possibility" is thus loaded. It assumes what it sets out to explain.

Whitehead's dipolar treatment thus has the disadvantage of placing potentiality outside of actual entities. Aristotle made it immanent. Whitehead has to get potentiality back into the entity and so he speaks of "subjective aim", but what is this but an affinity or a potentiality? Whether we speak of the potentiality of an acorn or of the subjective aim, what we mean is that an acorn may, under favorable conditions, become an oak. As long as entities have natures of their own that nature includes its "relevant potentialities." Are then eternal objects superfluous?

If eternal objects were merely possibilities in the abstract they would be superfluous. This inquiry has shown, however, that all potentialities are in God, and that God is the creative activity that makes for novelty. God's task is so to order possibilities that they may be actualized. God as the primordial actual entity is thus more than the mere "conceptual valuation" of the eternal objects. He is the organizing activity as well. But his organizing activity has an eye to the realization of potentialities. This means he must know the possibilities (subjective aim) of temporal entities, and must be able so to relate actual entities to each

other that the temporal system will realize their potentialities. Potentialities must, therefore, be both in the activity of an actual entity aiming at a realization of those potentialities, and also in the system of actual entities. The primordial nature provides this favorable system, but to do so it must "envisage" the potentialities.[109]

God does not create the world in the usual sense of the term. God thus does not create the actual entities. They are final realities, limited, temporal, concrete. They are given. The primordial nature of God is also given. It is the primordial entity, the primordial actuality of the principle of integration and creativity. God then does not create the temporal entities with their subjective aims (potentialities), but once they are given he "envisages" all their potentialities (together with all possible potentialities) and sets about to be the Creator, not of the entities, but of the world process: of order, novelty, increase of actuality, of creative advance. This process, in turn, actualizes his dreams ("envisagement" of potentialities) and becomes the Consequent nature of God, or God's dream progressively coming true. But throughout it is a co-operative enterprise of actual entities, finite and divine.

---

109. The interpretation here given is based on some implications of Whitehead's system, rather than on any definite statement made by Whitehead.

V. PRESENT STATUS

The present status of potentiality, as of causality, is problematic. Science appeals to it less and less, many philosophers qualify it more and more. Professor Frye of the department of physics of Boston University stated, in a personal interview, that the concept of potential energy is used in elementary physics but not in relativity physics. Even in elementary physics the term is a relational one. It is "energy existing in a positional form, not as motion."[110] The raised cannon ball and stretched bowstring are examples. In biology the theory of epigenesis has generally supplanted the theory of preformation. Thus growth is not looked upon as an "unfolding" of potentialities as fixed structures, but is rather a progressive organization. The various plasma regions of each individual egg are at first equipotential, but in development become differentiated.[111]

Philosophers use the term with varying degrees of enthusiasm or irritation. The disciples of Whitehead make extensive use of the concept, as can be well understood. Others are not so happy in the use of it. As Professor Demos pointed out,[112] to the empirical minded philosopher possibility seems abstract, to the rationalist it seems barbarous. So Bradley

---

110. Oxford English Dictionary, "Potential Energy."

111. Werkmeister, POS, 349.

112. Art. (1926),234.

(a rationalist) urges caution in the use of potentiality, for unless wisely used, he warns, the term "will remain, in the end, a wide-spread source of confusion and danger."[113] James Ward would be rid of the concept entirely, because it neither describes nor illuminates the process of development.[114] Verweyen claims that possibility is a thought- (Gedanken-) symbol. As such it is rightly used. When it is made into power or potentiality, then it is "hired out," falsely hypostatized.[115]

Though the concept of potentiality may not be altogether welcome,[116] it is, nevertheless, generally used. The controversy concerns not its use, but its interpretation. Where there is hesitancy in using the term, there is generally the fear that it will carry false metaphysical implications. As a "thought symbol" referring to the beginning of a process or activity, the concept would find general acceptance. The issue is whether it is more than a formula by which change may be predicted. The present attitudes towards this issue may be classified as the positivistic attitude and the ontological attitude. The positivistic theories are those views that entertain potentiality only as a thought or concept by which the beginning of a process may be conveniently related to its end. The ontological

113. AR, 387.

114. RE, 108.

115. POM, 111f.

116. Whitmore, Art. (1939),239.

theories maintain that potentiality is in some sense objective or ontological.

1. POSITIVISTIC THEORIES

The positivistic theories of potentiality either deny the concept any ontological validity or refuse to consider the ontological problem. That the acorn may become an oak is true, but to attribute the process to potentiality is not very illuminating. What is this dark mystery "potentiality"? All that can be seen is a process. Potentiality and actuality are abstractions of the knowing mind. First the mind abstracts from the process and then it sets about to hypostatize the abstract aspects. This is inadmissible. Potentiality as a term expressing a certain regularity of sequence is permissible, but as a description of an ontological principle it is quite meaningless.

Verweyen belongs to this group, since for him possibility is merely a thought symbol. The positivists and phenomenologists naturally belong here. Others, though not positivists in other regards, may hold a positivistic view of potentiality. James Ward is undoubtedly one of these. Hartmann[117] belongs here since for him the distinction between possibility and actuality is created by the limitations of the human mind and its temporal form of experience. In Realität the two are identical. Any view of potentiality which considers it merely

117. MUW.

as a form of the mind's way of knowing is positivistic in the sense here used.

2. ONTOLOGICAL THEORIES

The ontological theories claim that there must be some objective connection in the "thing" or in reality that makes the concept of potentiality valid. The concept of potentiality is a way of knowing because there is "something" objective corresponding to it that may be so known. But what is that "something"?

The answers are various, but they may be grouped together under four types: the Platonic (or conceptualistic) type, the inherence type, the individualistic (or particularistic) type, and the environmentalistic (or contextualistic) type. The Platonic type is represented by Whitehead and his followers. The term Platonic is not to suggest that they hold Plato's view of possibility. It merely means that for this type possibilities are eternal forms in some sense or other. They are "real" but not existent. Yet they are more than subsistent; they are relevant to existence.[118] They are the metaphysical ground of potentiality in existence.

The "inherence type" is represented by the theory of preformation, the scholastic doctrine of powers inhering in substance, and some conceptions of the "tendency" theory.

---

118. A realm of pure subsistents without contact with existence cannot metaphysically "ground" potentiality.

In this type the future state is embedded in the present state as a germ to be evolved (in original sense of the word), or as a power that acts so as to bring about the future state.[119]

The individualistic type is represented by Strong.[120] Inherent powers, eternal forms, vital principle are not needed. Development proceeds from the nature of the thing itself. It aims "to steer clear of the Scylla of transcendent ontological forms, on the one hand, and the Charybdis of imminent [sic] teleology on the other."[121] The potentiality is real, but its reality is the thing in development.

The environmentalistic type is represented by Loewenberg[122] and Pepper.[123] Possibility is a matter of context. "The possible is but the actual in embryo lying in the womb of a context."[124] The possible is not an eternal form, nor a law of the "thing," nor a "power," but the ever changing environment producing ever new configurations.

It is obvious that not all these types are mutually exclusive. In fact a philosopher may hold to more than one type. Thus Whitehead holds to eternal forms and environ-

---

119. Dubray, "Actus and Potentia," Catholic Encyclopedia, I, 124-125.

120. Art. (1934).

121. Ibid, 119.

122. Art. (1934).

123. Art. (1934).

124. Loewenberg, Art. (1934),104.

mentalism, but the source of possibility is, for him, the eternal forms. Bowne's voluntaristic interpretation of potentiality[125] has not been considered as a separate type, for it is a specification under the individualistic type.

The issues raised by these theories will be treated in greater detail in the chapters to follow. Here, however, it seems adviseable to compare the men interpreted in the historical section with the theories presented in this section.

Though allowances have to be made, yet in a general way the views of the four philosophers studied may be related to these four theories. The discussion has already shown that Whitehead upholds the conceptualistic theory. Aristotle, as interpreted in this investigation, holds the individualistic theory. Kant is fundamentally a positivist for the Ding-an-sich cannot be known. For him the difference between the actual and the possible is not a difference in objective status, but a difference in the way a thing is being known (i.e., perceptually or conceptually). Hegel's manysidedness is shown by the fact that he has affinities with all the theories. Fundamentally he holds to the individualistic theory, but interprets the "thing" as a totality, a whole process.[126] He also emphasized relations, and so the context,

---

125. TTK, 96, 108; MET, 87f.

126. For comparison with Aristotle see above, 67f.

in which a thing finds itself. A thing out of its context is an abstraction. In addition he is a conceptualist, since concepts are real for Hegel. In fact the Notion (Begriff) reconciles the dualism of potentiality and actuality, according to Hegel. "The movement of the Notion is development: by which that only is explicit which is already implicitly present."[127] Though he does not hold to a mechanical view of the inherence theory,[128] yet he admits that:

> The truth of the hypothesis on the other hand lies in its perceiving that in the process of development the notion keeps to itself and only gives rise to alteration of form, without making any addition in point of content. It is this nature of the notion -- this manifestation of itself in its process as a development of its own self,-- which is chiefly the view of those who speak of innate ideas.[129]

Inherence has meaning, in other words, only when interpreted as the rationally implicit.

---

127. Wallace, LOH, 289.

128. Loc. cit. In fact none of the four philosophers investigated advanced the inherence theory, though Aristotle has been interpreted in terms of inherence by the Scholastics.

129. Loc. cit.

CHAPTER III

FURTHER DEFINITION AND PROBLEMS

INTRODUCTION

Chapter I gave a preliminary definition of the concept of potentiality. Chapter II presented a brief historical survey. The present chapter will give a further definition of the concept, will show its similarities to and differences from related concepts, especially possibility; and will inquire into some of the metaphysical problems of the category. This latter inquiry will merely present the issues. The rest of the study will discuss them more fully.

I. POTENTIALITY AND RELATED CONCEPTS

Possibility. The concept most related to, and oft identified with, the category of potentiality is that of possibility. At times the two concepts have been used interchangeably even in this study. But strictly speaking the two terms are different. Chapter I showed that possibility is the broader term. Not all possibilities are potentialities, but every potentiality is a possibility. Possibility is a logical concept and means the thinkable. Potentiality is a dynamic concept and refers to what may actually take place. Possibility is the conceivable, potentiality is the "becomeable." Possibility may be used in the sense of

potentiality, because the conceivable may also become actual. When used in this sense the problems of possibility and those of potentiality are the same, but since possibility has a larger meaning many of the problems of possibility are irrelevant to the problems of potentiality. This is especially true of the logical aspects of the concept of possibility, e.g. whether there can be a possibility that will never become an actuality.

It is not the purpose of this inquiry to go into the various meanings of possibility. This study considers possibility only in so far as it is significant for the concept of potentiality. In this sense "the only possible is the implications of the actual,"[1] for potentiality presupposes the actual. That is, a potentiality can become an actuality only if there is an actuality that can so become. In other words this study is concerned with possibility only in the sense of "real possibility," and this is used not in the Kantian sense of the experienceable, but in the sense of what can issue forth from the structure of reality. It is not concerned with "other possible worlds,"[2] but with the possibilities of this world. Thus understood possibility is practically identical with potentiality. The real possibilities of the actual are the potentialities of the actual.

---

1. Bowne, TTK, 103.

2. A Leibnizian problem.

Possibility is practically identical with potentiality but not wholly, because the two concepts have different connotations. Usage has loaded the terms. Real possibility is the bare idea that a conceivable event may take place since the nature of reality is such as it is. Given some parts of what is necessary to produce an actuality, then the presence of the other necessary parts produces the actuality.[3] If the nature of reality is such that the missing parts may be presented, then the event is a possibility. Possibility then is what is coherently conceivable as realizable in relation to the whole of reality. Possibility thus emphasizes the whole. Possibility, again, with its connotation of conceivability is more adventurous, more coherently imaginative. It is enticed by the idea of novelty. Coherent conceivability also implies concepts, so possibility suggests a realm of universals, concepts, Forms; or it may suggest a Conceiver.

If possibility is loaded with connotations, potentiality is weighed down with them. Potentiality connotes the idea of power. Potentiality may thus be conceived as possibility plus power. Dewey, for example, puts it thus:

> Potentialities are to be distinguished from abstract possibilities. The former are existential "powers" that are actualized under given conditions of existential interaction. Possibility, on the other hand, is a matter of an operation as such -- it is operability.[4]

---

3. Ranzoli, DSF, "Possibilità," 875f.

4. LOG, 289. Dewey as an Instrumentalist substitutes "operation" and "operability" for "conception" and "conceivability."

So when Aristotle speaks of potentiality he uses the term δύναμις. Kant, on the other hand, being interested in Möglichkeit, interprets the possible oak as the concept oak, which becomes actual when connected with sensuous experience. It is the attribution of power to potentiality that led Verweyen, as was shown above, to say that potentiality is the hypostatization of the logical concept of possibility.[5]

Potentiality has other connotations. Including the concept of power, it suggests causation rather than novelty. Possibility looks ahead, potentiality as power looks backward. Potentiality generally is attributed to one thing or event, whereas possibility involves a whole context. That is, the potentiality of an egg is to be a chick, but the possibility of its becoming one depends on a context of favorable elements. Potentiality, again, is properly ascribed only to the decisive element in a context. In a context of seed, soil, water, temperature, the decisive element is the seed. The same soil, water, temperature, will produce different plants when different kinds of seeds are used. Potentiality is thus to be ascribed only to the seed not to the other elements.[6] Thus Bradley says that potentiality validly applies to a condition only when "that part of the condition which appears at

5. PDM, 94f.

6. The Scholastics take exception here. They say the seed has active potentiality and the other elements have passive potentiality.

present can . . . produce causally the rest," and it must effect this "without the entire loss of its own existing character."[7] Both possibility and potentiality are found when some part of what is necessary to produce an actuality is given; but possibility refers to the availability of the other parts, whereas potentiality refers to the action of the "decisive" element upon the other parts. Possibility, consequently, is more general, meaning the availability of alternatives; whereas potentiality is more definite, meaning the definite power (or activity) by which a thing becomes something else. Again potentiality often has a teleological connotation, an egg is a potential chick, whereas possibility is changeability in general; it is possible for H_2O to be either ice, water, or vapor. To say that water is potential ice would be to connote (though not logically imply) that water has an "urge" towards the ice stage, which of course is not so. It is a neutral possibility. Aristotle uses potentiality in this "neutral" sense, but he does so only when he has in mind "matter." ὕλη, however, is only "passive potentiality," whereas δύναμις is "active potentiality." So even Aristotle has two different ideas in mind, though he uses the same term. At any rate the present general connotation of potentiality is telic.

The purpose of the above analysis was not only to

---

7. AR, 385.

help clarify the meanings of possibility and potentiality in reference to each other, but also to show that there are two dominating strands of thought involved in the category of potentiality. It was shown that the category of real possibility and of potentiality could be equated were it not for the connotations that have loaded the meanings of the two terms. Possibility is the coherently conceivable, involves the whole, looks forward to novelty, and is conceptualistic. Potentiality is power, refers especially to the "thing" (actual object on hand), looks backward into causal connection, is dynamic and telic. These different meanings, however, are not only connotations, but are also reflections of different philosophical traditions. Plato said concepts are real. Kant showed that when a thing is entertained only conceptually, it is not actual but possible. The conceptualistic theory combines the two points of view and interprets potentiality in terms of "real" concepts (Forms). The concepts are not the potentialities in the thing or of the thing, but are "real" possibilities on their own right. The "real" is not actual (existent), but may be actualized. How it may be actualized is a problem yet to be discussed, but the point here is that the conceptualistic view follows the Platonic and Kantian tradition and attributes to potentiality the connotations of possibility. On the other hand they who follow the Aristotelian tradition and look upon the individual rather than the concept as the source of potentiality, interpret the term

individualistically and dynamically. The conceptualistic view has a tendency towards transcendence, and is more favorable to novelty. The dynamic view upholds immanence and favors continuity. The dynamic view may take the form of the inherence theory or the individualistic theory depending on how "power" is interpreted and where it is placed.

Hegel emphasizes the concrete relations of things. Concepts are real, but they are real only in their relations. The actualization of possibilities thus depends upon the total world system. Hegel's system is organic. Hegel's system is also one of process. The individual is continually growing till he reaches his full stature. When the height of development is reached, the process of degeneration sets in. In the Hegelian system are thus found the connotations suggested both by the term "possibility" and by the term "potentiality." The concrete potentiality is the potentiality of the thing in all its connections. The concrete potentiality is thus both the thing and its context. In so far as Hegel emphasizes the context, he emphasizes "possibility" as analyzed in this chapter. In so far as he emphasizes the developing individual, he emphasizes potentiality. Contextualism, emphasizing systems, consciously or unconsciously carries on one part of the Hegelian emphasis; the part best described by the connotations contained in the concept of "real possibility." It is evident, then, that the connotations suggested by the term

"possibility" (real possibility) best describe the conceptual and the contextual theory. The connotations suggested by the term "potentiality" best describe the inherence and individualistic theory. The first two theories place potentialities outside the thing. The last two attribute potentialty to the thing.

The facts of development, of growth, of orderly process create a formal demand for a category that can describe orderly sequence and permit a reasonable degree of predictability. The category of real possibility, in the sense of the implications of the actual, meets the demand from the point of view of the context. The category of potentiality meets this demand from the point of view of the orderly "power" of a thing. It seems evident however that the two concepts are supplementary rather than exclusive. Potentiality as power would never become actual without the presence of the other necessary conditions. Likewise there would be no implications in the totality of actualities unless each actuality had some "power" of its own.

Power. Power is the ability to act. Thus in contrast to force power refers to the state preceding the activity.[8] The concept of power and that of potentiality are closely related. Power may be said to be the potentiality of activity

8. J.H. Tufts, "Power" in Baldwin, DPP.

in general, whereas a potentiality is a definite kind of power. Potentiality thus implies a "nature" of the thing, power does not, being the mere ability to act. Whether the "nature" of the thing is the potentiality or has the potentiality remains to be seen.

Probability. From an epistemic point of view a potentiality is what will probably take place under certain conditions. But the two concepts are different. Probability is a statistical notion which deals with groups and averages. Potentiality is a dynamic concept and deals with the process of the thing. Potentiality and probability both are involved in predictability, but probability considers predictability from the point of view of averages; potentiality means predictability in the sense that if certain conditions are present certain results will follow due to the nature of the things concerned.[9]

II. FURTHER ANALYSIS

1. POSITIVISTIC ANALYSIS

The last chapter showed, in its discussion of the "positivistic theories" that there is a formal demand for the category of potentiality. As Bowne showed[10] the notion

9. The notion of "faculty" will be considered in chapter V.

10. MET, 87f.

of potentiality declares that there must be a determining connection somewhere between the later and former states of a process. A strictly positivistic view would not even admit that much. It would hold that the notion of potentiality is merely an affirmation that the mind can construct a formula by which it can talk about orderly sequence. It is the mind's way of connecting the relation of before and after. With the overthrow of causality comes the overthrow of potentiality (in an objective sense), for potentiality is a definite causality; it is causality with definite character or personality so to speak. Objectively considered potentiality is no different from probability; subjectively the mind conceives the end as being related to the beginning.

Such a view can satisfy none but confirmed positivists. The mind needs an objective principle as the explanation of orderly sequence. There must be some objective reason why the probabilities of acorns becoming oaks under favorable conditions are high, whereas the probability of grains of sand becoming wheat is zero. It may be difficult to find that reason, but it is worth trying. If the orderly sequence has no orderly objective basis, then it is either a chance product or an illusion. The orderliness of chance turns out to be a greater mystery than that of potentiality. If the orderliness is an illusion or merely a subjective form, then the problem of the generality of the illusion becomes a mystery, or else

Kantian agnosticism must be adopted. The experience of orderly sequence is of course a subjective experience. All experience must be subjective. The category of potentiality is a concept of the human mind trying to explain experience. All concepts must belong to the human mind. The human mind applies the concept of potentiality when it sees a regularity of sequence so that certain ends follow from certain beginnings under certain conditions. Thus it is true that orderly sequence and predictability are the marks of potentiality, but it is not true that they are the entire meaning of potentiality. Potentiality implies an objective basis for the connections between the beginning and the end of a process.

2. ONTOLOGICAL ANALYSIS

The category of potentiality asserts that there must be a determining connection somewhere that ontologically relates the latter and former states of a process. The potentiality must thus be an actuality. In addition it is a definite potentiality. It has a definite nature. The potentiality of an egg is to be a chick and not a rabbit. But how can these things be? What does it mean to speak of potentiality as actuality? How can potentiality be definite? Definiteness belongs to actuality as Aristotle showed. As Hartshorne also puts it: "If the possible is not distinguished from the

actual by deficient definiteness, how else is it distinguished?"[11] Potentiality is something definite which cannot be definite; it is something actual which is not yet actual. This is the true "Paradox of Potentiality."[12]

It might seem at first that the difficulty is only a verbal one. Potentiality must be actual and definite, but as a potentiality it is an actual potentiality but not an actual actuality. Such a distinction restates the problem, but does not clarify it. What does actual potentiality mean? O'Connor[13] states the Scholastic solution by saying that potentiality is neither being in the full sense nor not-being. Potentiality is thus "real" but not "actual." Potentiality is not actual being itself, but yet is "something real, i.e., a <u>power</u> in existing things to do or to become something not yet actual."[14] But again this is merely a statement of the problem, not a clarification. The nature of a reality that is neither being nor not-being is not very clear, to say the

---

11. MVG, 225.

12. Whitmore, Art. (1939). Whitmore, however, considers the paradox the fact that it is an experience of anticipation, but is based on retrospection (p.246). This may be a psychological paradox, but the logical paradox seems to be expressed above.

13. PE, 28f.

14. Op. cit., 36.

least. To define potentiality as a "power" is to define the definite by the vague for the distinction between potentiality and power is that potentiality is definite power, as was shown above. To say that potentiality is real does not help until it is explained what "real" can mean as distinct from actual.

Phillips[14a] shows that the difficulties involved in the notion of passive potency led Scotus to deny any objective reality to the notion. He himself, however, upholds it because, he claims, a being in "act" cannot change since it is already in act and so is perfect. What this means is that if an act is doing all it can, then it cannot do anymore. Thus if there is no passive potency but only act, there can be no change. May it not be, however, the very nature of act to change? In this case potency is only a term expressing this nature of act itself. It does not refer to anything real <u>in</u> the act that is a potency, but only describes what happens when an act acts. Gilson, though a Scholastic, comes close to this conclusion:

> The fact of this universal becoming is formulated in the distinction of potency and act, governing all beings within our experience; <u>the distinction claims nothing more than to formulate this experience</u>.[14b]

Gilson goes on to argue that "it is being as such that commu-

---

14a. MTP, II,182f.

14b. Gilson, PTA, 270 (italics mine).

nicates its form as efficient cause, that produces change as moving force."[14c] These statements are penetrating, but leaves the reader wondering whether Gilson has not transcended the common Scholastic viewpoint. Potentiality for Gilson is only a descriptive term, whereas for O'Connor, Phillips, and Dubray[14d] potentiality is a reality.

It may be claimed that potentiality is a reality, but is not yet operative. Phillips seems to hold this position. Act, for him, is perfection. Imperfection is potency. Since things are a combination of both, then act must be limited in them. Now the limitation of act cannot be act, nor can it be nothing.[14e] Thus potentiality must be something, but not active. It is passive; a reality, yet not a perfect (acting) being.[14f] Nor need this notion be limited to the Scholastics. Others may possibly conceive of potentiality as actual but not yet operative. Thus the paradox of an actual potentiality is what exists non-operatively, but still exists. Given the proper conditions the operation starts. When the operation starts the potentiality has become an actuality. The existence of the potentiality cannot be known till it becomes an actuality, but it must have been there

---

14c. Op. cit., 271.

14d. Cf. above, 10.

14e. Phillips, MTP, II, 188.

14f. Op. cit., II,183.

before to operate at all. Here, however, the mystery has been merely shifted, not solved. What is a non-operative actuality? If it does absolutely nothing, it is nothing.[15] If it does something else, then the "something else" is accounted for, but not the potentiality. (i.e., in so far as the "something else" is not the potential activity that leads to the actuality in question, that activity is still non-operative and so non-existent, a nothing). Again the relationship of this "potentiality" to the thing as it actually is now, creates a problem. How can a thing which as actuality is full of activity have a non-operative potentiality in it?

Nor can a way out be found by considering potentialities as real in a subsistent sense, for either the realm of subsistence is unrelated to the actual world and thus cannot account for progress here, or if it is related then there must be some reason in the actual world why one potentiality rather than another is relevant. In discussing Whitehead it was shown that the term "relevancy" is loaded. It puts potentialities back into entities.

The environmentalist (or contextualist) position meets a similar difficulty. The total context may be more than the sum of its parts. Relations certainly are important. Configurations have meanings that their elements

---

15. Bowne conclusively showed this in MET, Chapter I.

do not have. Yet configurations can change, contexts can become different and have potentialities in their "womb,"[16] only because the elements can change. A context of static elements would be eternally the same. Thus the changeability of the context, though once changed, has potentialities in its own right as a context of active elements (not in its own right as abstract context), yet the potentialities ultimately depend upon the elements' potentialities or there would be no change of context.

Potentiality, thus, must be posited to account for process, growth, development. It must be given an ontological status or the limitation of positivism will haunt us. But how the "reality" of potentiality shall be considered, or where its metaphysical status shall be placed remains a mystery.

---

16. Cf. Loewenberg, above, 85.

CHAPTER IV

POTENTIALITY AND IMPERSONAL CAUSATION

The questions raised in the last chapter show that the problem of potentiality is bound up with the law of sufficient reason. The latter states must somehow be connected with the former states. The connection must be an ontological one in some way or other.

The various ontological theories may be conveniently grouped into the four types suggested in Chapter II: The conceptualistic type, the contextualistic type,[1] the inherence type, and the whole-thing type. Like all other classifications these types represent the main emphasis of various philosophers rather an exact delimitation of their position. The proper use of such a classification is not to pigeon-hole men, but to bring out different elements in a problem.

I. CONCEPTUALISM

The section on Whitehead outlined the conceptualist position. The entire metaphysics of Whitehead is, of course, not necessary for this type; all that is needed is that Eternal Forms be considered the source of potentiality. As Demos

---

1. The "contextualistic type" emphasizes the environment. There is no intention of limiting the theory to the Contextualistic School (e.g., as represented by Pepper), nor of identifying the one with the other.

points out,[1] whether or not possibility depends on mind depends, in turn, upon one's total metaphysical outlook. But regardless of that, for a conceptualist, possibility has as much or as little reality as actuality, for in process the actual disappears as soon as it appears. Possibility as Eternal Forms "is that constant element in change which enables us to know things by providing the mind with a foothold in the transitory."[2] These eternal possibilities are the metaphysical basis of process, but themselves are changeless, and so may be known. "Process is the injection of possibility into actuality."[3] Without possibility there would be either static identity or change without identity. These forms (possibilities) are effective as causes, and are gradually becoming concrete, for if universals are real, argues Demos, they must have a part in the process of becoming or growth or development. Eternal forms, then, are causes and constitute a part of the "sufficient reason" for novelty.

Possibility is more than the implicit. Emergence is genuine creativeness, more than the unfolding of what was already there. Without such "ingression" of possibility the future would be either wholly determined by the actual or a result of blind chance. A causally effective realm of possi-

---

1. Art. (1926), 236. (A knowledge of the above exposition of Whitehead is assumed in this section.)

2. Ibid., 235.

3. Ibid., 234.

bility must be invoked to have creativity.

The view is fascinating. Novelty, creativity, adventure are all provided for. But in spite of its fascination there are some problems that are left unsettled. How can universals be "effective causally"? Where shall the selection of the proper possibility be placed? Do the possibilities themselves know where they belong? Do the actualities select the possibilities? Is there some prearranged harmony of interaction? How can more than one actuality participate in the same possibility at the same time? To call the possibility a universal, is merely to say that it applies to many things at once, it does not explain how this can be.

It is apparent that the basic assumption of conceptualism is that things cannot change or develop by themselves. A thing is what it is, and remains such unless changed by some "cause" from the outside. Possibilities are these causes. How possibilities can be causes is not fully explained. Demos compares the influence of possibilities to the influence of ideals.[4] Ideals however, are not effective *per se*, but only through personality. If possibilities are like ideals then mind is needed to actualize them. The dynamic cause would then be mind, not possibility. Conceptualism often seems to invoke mind. Whitehead needs God to direct the creative advance into novelty. Demos needs mind to actualize the possibilities. Where mind is not appealed

4. Art. (1926), 239.

to, the relation of possibilities to the actual world remains a mystery.

But perhaps the basic assumption of conceptualism is not valid. Perhaps things do change by themselves. Or perhaps the "cause" of the change is not in a realm of subsistent possibilities but in the immediate environment of a thing, its context.

II. CONTEXTUALISM

The environmentalistic position is represented amongst others, by Loewenberg,[5] but the principles involved are widely used. All Gestalt philosophies are contextualistic in the sense here used. It is based on the principle that the whole is more than the sum of its parts. Consequently a context or pattern has possibilities the individual thing cannot have. There is no need to posit a separate realm of possibilities. The multifarious elements in any context continuously change about so as to create new possibilities. These possibilities are not actual (individual things), nor do they have a separate subsistent realm but are the "co-actual." "The possible, being the co-actual, belongs to the context where the actual is."[6] In a logical context possibility is a logical possibilitiy; in a real context there are real

5. Art. (1934). Not all the elements in this exposition are in Loewenberg, however.

6. Loewenberg, Art. (1934), 103.

possibilities. The more complex the context the greater the possibilities.

The theory is attractive. It overcomes the limitations of an atomistic approach. It sees the whole. It recognizes relations. It is pliable. It accounts for limitless possibilities. In spite of these values, however, the viewpoint leaves much unexplained. Does the context cause change or does it merely provide the occasion for change? It is hard to understand how a context could cause anything. Relations are "real" but not dynamic. Relations may provide possibilities, but "things" must have the power to actualize them. Again the context is what it is because of the nature of its elements. The nature of the elements includes the potentialities of the elements. It takes the context to reveal what those potentialities are, but the potentialities are still in the elements not in the context. The only sense in which the context provides possibilities is that "things" in interaction with other "things" express potentialities that before were unsuspected. Were the potentialities not there, the context would do nothing. A diamond planted in rich soil would never become an oak. To retort that rich soil plus diamond is a different context than rich soil plus acorn is true. Nevertheless, the reason it is true is that the potentialities of the acorn are different than those of the diamond.

If it be urged that rearrangements produce novelty without demanding any change from the elements except change

of position (e.g., a pile of bricks may form a square or an oblong) again this is true. It is also true that the possibilities in squares are different from the possibilities of oblongs. Yet it is also true that the gravitational action of each brick in an oblong is different from the gravitational action of each brick in a square. Should the bricks be capable of only one type of gravitational action the other type of configuration would not be possible. Configurations are real, but their reality is dependent upon the activity of the elements (or the agents) constituting the configuration. Rearrangement is possible because the elements can be rearranged, or can rearrange themselves.

Then there is the problem of the cause of the rearrangement. Is the novelty a chance product? But chance is no explanation. Is the novelty produced by a mechanical law? But how can a law produce anything? It may be the mechanical nature of the elements that produce the novelty, but this admission again repudiates the contextual theory of potentiality and places possibilities in "things."

Environmentalism involves interaction, whether the system (context) or the elements be taken as the ontological cause of the possibilities. Since interaction is necessary under any theory of potentiality (and, for that matter, in any theory of the universe) it is not a special problem of this inquiry. Nevertheless, as Bowne pointed out,[7] a system

7. MET, 80.

involves an exact adjustment of every member of the system to each other. But what effects the adjustment? The system cannot do so because it is an abstraction. It is the result of the adjustment, not the cause of it. The elements must either do it themselves or it must be done for them by some third dynamic reality. If the elements do it themselves and they act mechanically then the adjustment must be due to some preestablished harmony, and this drags the system back in again. If it is done by a third party the problem of interaction is merely shifted. How can the third party mechanically interact with the elements so as to adjust their interaction? Thus neither the system (context) nor the mechanical activity of the "things" (or elements of the context) can explain interaction, yet interaction is needed for a context to exist, to say nothing of the context creating new possibilities.

As in the case of conceptualism, the purposeful activity of mind seems to be the only explanation. Adjustments are then made rationally and freely, and the potentialities of the context are the potentialities of the minds working together and bringing out ever new possibilities in each other. The history of civilization is an example.

Perhaps this conclusion is too hasty. It may be true for minds, but certainly "things" and their potentialities cannot be so explained. Conceptualism hypostatizes possibilities and then has to appeal to mind to get them back into

things. Contextualism places the possibilities in the system and finds that it cannot have a system without having interacting things that found the system. Why not attribute the potentialities to things? The present discussion has shown that the possibilities of a context are the potentialities of its elements. Conceptualism can explain the "relevancy" of possibilities only by assuming the existence of the corresponding potentialities in things.[8] It is true that Chapter III pointed out some of the difficulties involved in attributing potentialities to things, but the other theories not only have difficulties of their own, but must also attribute potentialities to things. There seems to be no choice. But in what sense shall potentialities be attributed to "things"? The first theory to be considered is the "inherence theory."

III. THE INHERENCE THEORY

The inherence theory is the view of "common sense," of the substance theories, of the preformation theories, and at times of "tendency theories." They all agree in holding that in some sense or other the future state is embedded in the present state. It may be a power inhering in the thing, a germ to be unfolded, or a tendency predisposing the thing to a certain state or activity. The inherence view seems

8. Cf. discussion on Whitehead; Chapter II, sec. 3.

plausible because it grounds the future states of a thing in the past. There is a "reason" for the future. The development is ontologically grounded and not capricious. The acorn is potentially in the oak, the chick in the egg, the man in the child.

1. TENDENCY

The last chapter of this inquiry, however, showed that certain difficulties are present in the theory. How can a potentiality act unless it is actual? If it is actual what does it mean to call it potential? As Bowne puts it: "How to represent a potential as actual, or what the difference would be between a potential actual and an actual actual, is quite beyond us."[9] It cannot be a dormant activity, because the terms are contradictory. If it is inactive, then what is it, for this study assumes that being is active through and through, and that only the active can ever do anything. Assuming, however, that potentiality is an inactive tendency in things, the problem then is how the inactive can ever become active. It cannot become active by itself because it would have to be active to perform its acts. The activity either springs up like Topsy or must have some cause outside itself. To spring up by itself is to remove all reason or connection for the actuality, and so to do away with the

9. TTK, 94.

need of asserting potentiality. The alternative is to appeal to interaction, to a cause outside the tendency.

This alternative, likewise, is full of difficulties. How can a dormant (inactive) tendency interact with anything without acting? To put it the other way around, how can an active cause "interact" with a dormant tendency? Interaction involves response, and response involves action. The inactive can be pushed around, but cannot be made to do anything. To assume that the pushing around wakes up the dormant power is to assume that there is some activity that is not dormant. Organisms can be aroused from sleep because the nervous system is not fully dormant. If the tendency is inactive it cannot react. If it does not react, it remains inactive.[10]

The only solution seems to be to make the potentiality active. The terms seem to be mutually contradictory, for if a potentiality is active it would seem that it is no longer a potentiality but an actuality. But this is not necessary, for an activity may be checked by other activities, and the resulting equilibrium of activities would be the thing. Thus, in spite of Bowne, there is a sense in which a potential actuality is different from an actual actuality. The activity is actual, but its full expression is potential because its

---

10. These considerations do not exhaust the difficulties, e.g. the relation of inactive potentialities to one another and to the active thing is also full of difficulties, but it is best to go on to other considerations.

full expression is checked by other activities. For example, a coiled spring is kept from uncoiling by the activity of the box that contains it. The coiled spring pushes against the box, the box holds down the spring. Open the box and the spring uncoils. In this sense then potentiality is active, but needs to be set free of other restricting activities before it can attain it full expression. Of course the future state is not yet actual, but the activity that can lead to it is actual.[11]

The question now is whether this potentiality or tendency is <u>in</u> the thing or is the thing itself. At first this question seems trivial, and as far as a coiled spring is concerned it does not make much difference. But the issue becomes important when the potentialities of organisms are concerned. As a matter of fact, however, the reason the illustration of the coiled spring is convincing is just that the potentiality to uncoil is the potentiality of the whole spring. Put the potentiality in the spring and the question arises what is a spring without springiness? The cause of the uncoiling is thus not an "inherent" tendency <u>in</u> the spring, but the total context, spring-in-box, or the nature of the spring plus its environment.

---

11. Bowne, who inspired the analysis in this section, was a little too hasty to consider this type of potentiality satisfactorily. Though he does not say anything that would deny active potentiality in this sense, his manner is such as to brush it off. Cf. MET, 87f.

2. PREFORMATION

The problems of potentiality are most dramatically exemplified in the growth and development of organisms. The potentiality of the coiled spring is relatively simple and can be mechanically explained by the equilibrium of forces. The problem of the equilibrium of forces may have metaphysical issues of its own, but as far as the problem of potentiality is concerned it need not solve that metaphysical issue to make itself metaphysically respectable. The question does arise, however, whether the potentialities of organisms may be compared to the potentiality of the coiled spring. In the spring there was no new development, but merely the release of what was always there. Mechanical explanations must be of this nature. The effect must be in the cause. In machines there are no surprises and no development, but only an unfolding (or an uncoiling, to repeat the metaphor of the spring).

Preformation is the mechanical theory of development as applied to organisms. In this theory all the future states of the organism are in the germ "preformed" waiting to be unfolded. To say that the oak is potentially in the acorn is to assert that it is there in germinal form and that the actual oak will be merely the unfolding (or "evolving" in the literal sense) of the form already in the acorn. The potentiality is not a potentiality for producing something new,

but a potentiality of "uncoiling" so to speak.

The theory has the merit of holding to mechanism consistently, and of viewing potentiality dynamically as a system of centers of activity ready to burst forth upon the proper occasion. Of course such a blossoming forth depends on interaction, but interaction must be assumed amongst members of the universe in any theory of the universe that recognizes members. The theory has the disadvantage of not being in scientific favor just now. From a "scientific" point of view the wholeness of the egg is not a sum of organized parts. As Werkmeister puts it: " The egg has no preformed arrangement of specific parts, but only the potentialities for such parts."[12] In other words the egg as a whole is determined as to type or species, but the various plasma regions of the egg are "equipotential." The egg is a whole, not a sum of organized parts.

Scientific support is no sure test of metaphysical validity, nevertheless if scientific analyses cannot find specified parts, the theory has an initial disadvantage. The theory, in addition, breaks down of its own complexity. Not only is it difficult to understand how the various differentiations could be spatiallized in the egg (the human ovum, for example, is microscopic), but the theory requires much more besides. The difficulty of understanding spatial

12. POS, 350.

localization may be due to the limitations of the imagination, but the theory, to be effective, requires a law of the whole anyway. The law of the whole organism must control the activities of each part, getting them to work together, to evolve (show up at the proper time), and to develop harmoniously. The whole, in other words, must supervise and control the parts. This is especially needed since the parts "evolve" not from just one stage to another, but over a long series of stages. To explain this mechanically would require the "box theory" where each succeeding stage in the development was contained within the previous stage's potential state, just as a large box contains a smaller box and that still a smaller one <u>only</u> if the boxes were originally placed there. The alternative to either the organic law or the "box theory" would be to assume that each "potentiality" knew when to appear and agreed to do so. But this is tenable only if panpsychism is tenable. Panpsychism is "mentalistic." Mind makes its entrance again!

The "box theory" gets lost in the maze of the infinite regress. This, however, is not its only difficulty. What is the egg in which the potentialities inhere? Clearly it cannot be the sum total of the potentialities, for the potentialities inhere in it. But what is the egg without its potentialities? Assuming, nevertheless, that the egg is something other than the potentialities, the question then becomes, is this something a power or not? If it is not a

power and so does nothing, it need not be invoked for it is utterly ineffective. If it is a power of its own what does it do that the potentialities do not do, and how is it related to the potentialities? Does it control the potentialities so that they work together harmoniously according to the nature of the egg? In controlling the potentialities, however, the controlling power must itself develop or remain the same. If it remains the same it cannot progressively control the appearances of the potentialities, for the control being always the same the developing potentialities would get ahead of it. If it changes then it either must have potentialities of its own to account for its change, and so again create an infinite regress, or the nature of the whole must be such that it can change in controlling its potentialities. But if the nature of the whole can change, there is no need of "inherent" potentialities, for the reason potentialities were invoked was to explain the development of the organism. If one whole can develop without "inherent" potentialities any whole can. How the whole can develop without preformation may be a problem, but preformation does not avoid it. It merely shifts it. The fact is that the complex must come from the simple somewhere along the line, so why not place it where it is observed?

Though it is not the purpose of this inquiry to suggest solutions to the science of biology, yet it does seem that the theory of epigenesis,[13] by considering growth as progres-

---

13. Werkmeister, POS, 349f.

sive organization, avoids the pitfalls of the theory of preformation. The egg does not have the potentialities. It is the potentialities.

A word about vitalism: Vitalism is a theory about organic wholes. The entelechy uses the elements to build up the life-form. The potentialities of the organism are thus the entelechy or the Élan Vital. The vital impulse "in itself. . . is an immensity of potentiality."[14] But this "immensity of potentiality" must become definite before it can be a life-form for any definite organism. Potentiality in general, like being in general, is nothing. When it is definite it is only the ontological ground of the law of the whole. Whether such a grounding is valid or not, does not concern this study at this point. However, it is significant that vitalism attributes the potentiality to the law of the whole.

Potentiality, if it is to be affirmed at all, must be attributed to things, but cannot be placed in things. Tendencies must be tendencies of the whole thing. In organisms the development is a potentiality of the whole, not of any preformation in the whole. Vitalism reaffirms this law of the whole as potentiality. Panpsychism is a form of mentalism. It can explain the whole only by a cooperation of the mental entities with the plan of the whole.

---

14. Bergson, CE, 258.

IV. WHOLE-THING THEORY

Potentiality must be attributed to things, but how? The above discussion has shown that potentiality cannot be made to "inhere" in things. The mechanistic theory of reality plus the analytic method of investigation have lead to the inconsistencies of the inherence theory. The motto of analysis is, "Divide and Conquer," but potentiality is not so easy a victim. Divide the whole and potentiality torments the divider by hiding in the infinite regress. The divider must put up his sword, "for he who uses the sword will perish by the sword." Instead, the whole object must be coaxed to reveal its secret. Respect for the integrity of the whole, loving admiration for the complexity yet singleness of purpose of the whole, and patient observation of the whole may prevail where the brute force of anaylsis has failed.

The whole-thing theory is the simple assertion that the nature of a thing is such that it may become something else. Nothing is needed <u>in</u> the thing but the thing itself. A seed is an agent whose nature is to grow. Having such a nature it grows, and growing it develops into something else, for that is what growing means. To say that an egg is a potential chick is to say that the nature of the egg is such that under proper circumstances a chick is hatched therefrom. But how can a thing develop into another thing? It is its nature to do so? But what does that imply? What is this

"nature" that can now be egg and later be chick? Is it the same nature in both cases or a different nature? If the same why does it show itself now as egg now as chick? If different what does it mean to say that the nature of the egg develops into the chick? In the process of development when does it stop being egg and become chick? The whole-thing theory has an answer.

A thing is both what it is and what it may become. It is a process taken as a whole. No one phase of the process is the thing. The thing is defined only by the whole process. The nature of the thing is the nature of the whole process. Only as the process is arbitrarily broken up can the question be raised whether the nature of one stage is the same as that of another stage. Neither stage is the nature of the thing, for the thing is the whole process.[15] Now to speak of the potentiality of a thing is merely to assert that a thing is a growing process of a definite type. The beginning of the process is potential relative to the succeeding phases, but the dynamic nature is no single phase. It is the whole. The development is, thus, not from one stage to another, but is a development within the thing. The whole dynamic process is the reality, the concrete thing. The segments are abstractions. Take any two segments and the former may be considered the potentiality of the latter, but to do so is to

15. Strong, Art. (1934), 112-13, also holds that the nature of a thing is a continuous process.

miss the point that they are segments and to consider them as realities. Potentiality can be attributed to the segments only in the positivistic sense previously discussed. Ontological potentiality can belong only to the dynamic definite process. To speak of potentiality in this ontological sense is to assert that the process hangs together, that the beginning is related to the end. The nature of the dynamic activity at the beginning of the process is such that the end of the process follows from it. The whole process is the thing.

This definition of a "thing" is, of course, entirely different from the common sense view. It defines the ontological thing, not the phenomenal thing. If valid it gives potentiality an ontological status. But is it valid? According to this view the acorn is not a potential oak for both acorn and oak are moments of the one thing. Where, however, does a thing begin and end? This is a legitimate question; where indeed? An adequate answer to this question requires a separate study of its own, yet the following observations are not out of place. (The question concerns ontological things.) For an atomistic materialist the thing is the atom, for common sense it is a physical object, for a monist it is the universe. There is, thus, no agreement about the "thing." The theory here suggested presents the concept of thinghood required by the ontological concept of potentiality. The views of the atomists and of common sense are inadequate. The view of the Absolutist is not required for the theory of

potentiality, whatever may be required for an ultimate view of reality. The ontological implications of the concept of potentiality go no further than the view above presented. In an ideal sense each philosophical problem implies a whole metaphysics. Nevertheless the immediate problem under investigation would not justify philosophical conclusions that would require the consideration of many other problems as well.

It may be objected that defining "the thing" in such a way as to include the entire process of development hides the problem of potentiality rather than solves it. This is an objection from the analytic viewpoint again which insists on considering parts rather than wholes. The first moment of the thing, it is assumed, must somehow be the cause of the last and since an effect must be in the cause then the end must be in the beginning and the difficulties of the mechanistic inherence theories are resurrected. The answer is that every activity must have some duration. A process made up of timeless instants would be timeless stagnation. Time is duration as well as succession.[16] "Duration implies continuity of a process, in which there is cumulative change, whereas succession implies continuity of a series, in which there is juxtaposition of parts that are external to one another."[17]

---

16. Gunn, Time, 376

17. Mackay, Art. (1935), 179.

Without duration there would be no flow. Without succession there would be no change. Consequently durational activity (and this means any activity) is a temporal whole no matter how short the analyst wants to make the duration, for to deny duration and reduce time to instants is to deny activity. Activity does not take time, it is time, has duration. If the activity is that of a developing process, then in any durational segment of the process the end is more than the beginning. Let the duration be ever so short, this is still true. Since the duration is the briefest the analyst could make it without reducing it to timeless instants, the duration has no temporal parts, i.e., is a temporal whole. The process filling out this whole of time (really creating the time) is thus also a temporal whole. But in a developing process the end is always, it was shown, more than the beginning, no matter how brief the process. As a result, this indivisible temporal process has experienced growth, but since it has no parts this growth is the action of the whole, be the whole ever so small. Once the principle that a whole process can be a growth by the power of the whole itself and not because of its parts is accepted, then that principle applies to large wholes as well as small ones. Logic is no respecter of size. There may be a debate as to whether any particular object is a whole or not, but if it is a whole the same principles apply to it irrespective of size. The whole-thing theory may be wrong in considering things as wholes, but it is not

wrong in insisting that if "things" are wholes, then the action of the thing is the activity of the whole, no matter how long or how short a time it takes that activity to act. The beginning does not contain the end, nor mechanically cause the end; it becomes the end. The end and the beginning are only aspects of the whole.

Ontological things, according to this theory, are durational wholes. In grasping the duration conceptually, however, the mind breaks it up into a series of static states. These static atates are interpreted by static concepts. The durational continuity of time is broken up into static instants. The wholeness of events is cut up into a succession of static segments. After breaking up the process, conceptual thinking complains, Humpty-Dumpty fashion, that it cannot put the whole together again. Such a method results in what may be called the "slice-theory" of reality. It understands slices, but not processes, and since the slices are slices of processes, it does not even understand the slices. -- The synoptic view considers things as durations. The end is the "explication" of the beginning. The beginning is the end "implicit." The entire process is the meaning and definition of the thing. This is the Hegelian notion of the "explicit" and of the "implicit" applied to ontological things.

Though the process considered in respect to its meaning and definition may be regarded as the explication of the thing, the process itself is not an unfolding (horrors

of the inherence theory!) but a growth in which the former state is taken up and objectified (as Whitehead would say), becoming part of the total cumulative whole. A snowball rolling down a hill growing larger and larger until its momentum is spent is a good illustration. In the continuing and diminishing velocity of its roll, and in the continuous increase in size, the snowball never is, but is always becoming. The whole process defines the snowball. And after it has lost its momentum, its size begins to diminish by the heat of the sun, until it is no more. The snowball is the whole growth and diminution. The potentialities of the snowball are the potentialities of the whole temporal process of growth and movement. The "slice theory" does not apply, for at no moment does the motion stop (while it is still rolling), at no moment is the velocity even constant, at no moment is its size fixed. In organisms the process is both more complicated and more dramatic. The manner in which the organism relates the means to ends strikingly exemplifies the control of the whole over the process.

The thing is, consequently, a temporal process taken as a whole. The reality of the process is the reality of the thing. The continuity of the process is the continuity of the thing. The development of the process is the development of the thing. As <u>temporal</u> process it may be considered both as duration and as succession. From the point of view of duration the process is the "nature of the thing." From

the point of view of succession the process is the actualization of the potential. The potentiality is not in any one phase, it is in the whole process. Rather, it is the process from the point of view of the beginning. From one point of view the potentiality of the process could be considered as the law of the whole process. This is a conceptualistic interpretation. The potentiality of the process is its Form or law. But the law is only a formula of the activity of the process. The activity is the dynamic reality of the process. From this point of view the potentiality is the dynamic activity in its initial stage. As such it is the "original nature" of the active process. This original nature has a character of its own. To be more exact, the original activity has a determinate nature. There is no being in general, no potentiality in general. All existence is determinate existence. But the determinate existence is also determinable. Its determinateness is, from one point of view, nothing else than a limitation to its determinableness. It can grow in just certain ways and no other. Its nature, thus, is the definition of its potentialities. To put it differently, its nature is the type of its process. As potentiality it lacks complete determination (Aristotle) as determinable it gains determination in process. Indeed the process is nothing but the further determination of the original activity. The full nature of the activity is realized only in its complete process. The process takes place in an environment. The in-

cidents of interaction cumulatively bring out the further possibilities of the process (contextualism). The environment is needed to actualize the potentialities of the activity, and in actualizing them it reveals new potentialities. The nature of the thing then is from one point of view its determinableness, from another point of view it is the activity by which it fills out its determinableness.

This entire analysis consists of just different ways of saying that from the point of view of the whole-thing theory potentiality is a name for all that the whole process (thing) may become, and that all that it may become depends on the determinate nature of the activity, working itself out in history.

It must be emphasized that the developmental process is not mechanical, for in mechanism there can be only an unfolding, not a growth.[18] The organic view affirms the growth of the whole. What is the ultimate nature of the whole? Is it the vital impulse? Is it the universe itself? Is it Mind? The proper answer to these questions requires a whole metaphysical system, but a few points may be noted. The vital impulse is not needed. The Élan Vital is, as was shown, a mass of potentialities. Nevertheless unless matter be conceived as inert there is no need for the vital impulse. The nature of the whole active reality does all that the vital

18. Whitmore, Art. (1939), 242.

impulse can do. If the vital impulse were intelligence then it would be mind, but a mere vital impulse is just the nature of the thing baptized "vital." -- The whole thing depends on the universe and forms part of it, but it need not ultimately be extended to include the whole universe unless some form of Absolute Monism be the only tenable philosophy.

Is it of the nature of mind? This much may be said, at least. Mind is the only exemplification of such wholes that human beings can understand concretely. The category of potentiality has lead the argument to assert the reality of temporal processes, of activity as wholes. A whole is not a law but a process. The law is only the formula of the process. The dynamic activity establishes the law, not the law the activity. How a non-rational process can act so as to establish a formula (or law) of an organic whole, is hard to understand. The category of potentiality can coherently be held only if the process does establish such a law. The establishment of such a law, however, implies intelligence. At least, mind is the only reality we know that acts purposively. Or, what amounts to the same thing, mind is the only reality we know that develops not mechanically but out of itself and its interactions. Such growth can be concretely understood only in minds. As Bowne said, "The categories must be understood as realized in active intelligence."[19] The next chapter considers these issues more in detail.

---

19. MET, 91.

CHAPTER V

POTENTIALITY AND PERSONAL CAUSATION

I. MIND AND THE LAW OF THE WHOLE

This study has shown that the demand for the category of potentiality is created by the demands of "the law of sufficient reason." The future must somehow have its raison d'être in what has gone before. Chapter IV showed that when the law of sufficient reason is mechanically interpreted it loses itself in the infinite regress. The mechanistic interpretation of the category of potentiality, however, is not necessary. The law of sufficient reason need not be equated to the law of sufficient cause (meaning by cause mechanical production). All that is required is that sufficient reason be found for any event. The theory of the whole-thing showed that the sufficient reason for any developing process is the nature of the process taken as a whole. The expanding activity which is the dynamic action of the process is the "thing." It develops out of itself, not in the sense that the future is hidden in the present, but in the sense that it is its own development. To understand the development is to understand the "thing." In this sense the thing is its own potentiality. It is the source of its own growth as the flame is the source of its own light. The category of potentiality ontologically considered is thus

the notion of the whole-thing developing itself.

How shall such a "thing" be metaphysically conceived? The "thing" may be formally defined as the law of the whole. The "thing," however, establishes the law, not the law the thing. As Montague pointed out[1] in the physical level changes come about through changes of relations in spatio-temporal positions. Here the active process may be worked back and forth so that there is no development, only change. On the chemical level the process creates something new. H is not water, O is not water. H_2O together produce a synthesis and a novelty. The novelty, however, is a compound. The elements do not develop. They merely enter into an alliance, so to speak. The alliance is so close that the two together create a new effect, the result of their interaction.

On the vital level there is genuine development, and it is on this level that the problem of the metaphysical nature of the whole-thing first becomes acute. The activity develops itself according to law, but is not developed by law. The law is a true description of the activity, yet the law forms no part of the activity. The law, moreover, describes the activity of a whole class of things, yet in each case the law forms no part of the activity, though the activity of each member of the class independently follows the formula

1. Art. (NR), 284. He has three levels: The mechanical, the vital, the sensory. The chemical level and the personal level should have been included, however. Montague recognizes the personal level in his Ingersoll Lecture, CSD, 74.

in all its complicated ramifications of growth and decay. Can the law then be coherently denied to the activity? The relation is too close. The law describes the action too well to be separated from the activity. The truth in the conceptualist view of potentiality is that the law describes the possibilities of the "thing." But the law is an abstraction. If the present analysis is correct, however, then the activity by itself is also an abstraction. The activity by itself cannot be described, and so can have no character, and so no being. The concrete reality is the law-embodying activity. The law cannot be an abstraction <u>in</u> the thing (this would be the inherence error again), nor can it be effective as an abstraction outside the thing (the conceptualist fallacy), but must be one with the thing. How can this be?

The nature of thought offers a clue. From one point of view thoughts are concepts; from another point of view they are activities. As concepts they are abstraction, but as actively thought they are concrete. Likewise a law may be considered as an abstract concept or as a formula entertained by some mind. When being thought, a law is concrete. A formula that is not being thought by someone is nothing. It is an abstract projection of a thought into the nothingness of no-thought; a stratosphere where not even formulas may survive in the rarefied air. The first concretion of a law, then, is its being thought.

A mind can not only think; it can also act. When a mind acts on the basis of a law conceptually entertained, that law receives its second concretion. It becomes an objectified process (the former being a subjective concretion). Such a process is an objectified thought, an embodied law. The law (or formula) correctly describes the process because it guides the process, yet it guides the process not as an abstract formula but as an actual thought of a definite mind. A law, then, becomes objectified in a process, only if it is thought by someone, and only if that someone who thinks the thought can control the process. From the point of view of the process this means that the activity must be such that it can either think the formula of the process, or be controlled by one who can.

II. PURPOSE AND THE LAW OF THE WHOLE

On the basis of the above analysis the potentialities of the "thing" are the possibilities in the first concretion of the formula of the process. If the "thing" can think the formula itself, then it directs its own growth. If it cannot think the law itself, then it must be directed by whatever can think the law and act as guide. The concrete thing, however, is always a combination of law and activity, or, to put it differently, is always an activity expressing some law. Thus a concrete thing is always a thought embodying

activity. To know the law is to know the thing. To know the possibilities in the law is to know the potentialities of the thing. This is the conceptualist's insight modified by the statement that the law to be effective must first be thought.

All this is just another way of saying that the potentialities of a thing are the goals the thing is realizing. All growth is teleological. The inherence theory tried to explain teleology by mechanism and failed. The conceptualist theory was too abstract. The contextualist was too involved in patterns. Final cause or purpose must be invoked to explain the process. The mechanical categories end in the infinite regress, purpose looks ahead. Purpose, however, to be an effective cause must act in some way. Purpose must mean purposive causality. How can a purpose be a purposive cause?

Demos[2] claims that purposive action is control of what is by what does not yet exist. Now how can that be? It cannot be held that the future controls the process for the future not only does not exist, but the future may never realize the purpose. The plan may fail. Demos concludes that purpose is possibility controlling actuality. How a possibility can control anything in a dynamic sense is no clearer than how purpose (as a concept) can. The only solution seems to be that a purpose can be effective only

---

2. Art. (1926), 236.

when it is a purpose of some mind.[3] The causality of purpose is volitional causality. The goal must first be conceived and then acted upon. The intentions, as entertained by a mind, are not in the future nor in a subsistent realm, but are in the immediate present. The problem of how the future can act on the present does not, consequently, exist.

The activity of the whole-process embodies, thus, both thought and purpose, and thought and purpose can be concrete only when entertained by some mind, and can be effective only when put into operation by the entertaining mind, i.e., by volitional causality. Purposive causation, moreover, involves not only a conception of the end desired and the ability to act, but also a knowledge of the means needed to attain the end. This, in turn, implies a knowledge of the action and reaction of each expedient in its interaction with the other expedients and with the whole. The Aristotelian solution that each object "desires" the Prime Mover is not sufficient. The desire must be supplemented by a knowledge of the nature of the universe.

III. GOD AND POTENTIALITY

God alone seems to meet the conditions required for the ontological validity of potentiality. It may be that

---

3. As Bowne puts it: "A purpose as such is only a conception and demands some means for its realization." (TTK,110.)

each "whole-thing" is an intelligence that knows its destiny and can guide its own growth. But, as was just shown, a mere knowledge of one's destiny plus power to control one's growth is not sufficient. The growth depends upon the environment (the truth in contextualism), for the plan can be realized only by the utilization of the proper means. An interacting system has already been shown to involve a Systematizer.[4] A thing can have potential growth only if it embodies a law of growth, a purpose, a knowledge of the universe. Such a "thing" can only be a Divine volitional act. A Divine volitional act has a purpose, is a concrete law of action, knows how to utilize the resources of the universe. It may be objected that this conclusion is too hasty. A thing need not be God's volitional act; all that is necessary is that a developing thing be guided by God. God provides it with purpose and directs its interaction so that the goal may be realized, but the thing itself is other than the Divine activity.[5] But such arguments are just variations of the Ding-an-sich view. What is this thing when not being guided by God; or better, take away the formula of the activity and what is left? The formless activity is an abstraction, a Ding-an-sich that just acts, yet acts in no particular way.

---

4. Chapter IV, sec. II.

5. This is, in essence, Whitehead's position, as well as the "common sense" theistic view.

It is as useless as inactive matter or substance. All existence must be in character; must have some form. Nor can it be maintained that God merely provides the purpose (goal) but the thing itself has the law of its activity, for the purpose is nothing other than the direction of the activity. An activity getting nowhere or doing nothing is no activity.

To be sure the thing may be conceived as an intelligent monad guiding its own growth, but depending on God for its successful interaction with other monads. Such a Leibnizian conception meets with two objections. The first is that material things as observed do not fulfill the definition of intelligence as usually defined. The second is that it creates an unnecessary complexity. Not only must the monad known its goal and guide its growth, but God must also know it and act accordingly. Now if God created the monad, he is only duplicating his activity. If the monads always existed they must either have always existed in character or without determination of any kind. Existence without determination is unintelligible. But for a monad to exist in character and yet to have to depend on interaction for the actualization of its character is equally unintelligible. As has already been shown a thing is only what it does. What it can become exists only conceptually. To assume that an acorn conceptually knows itself as a potential oak and acts accordingly is to ascribe to it more intelligence than is probable. Again the

problem of its interaction is difficult. What does it mean to depend on God for successful interaction? Either the acorn knows when the right conditions for interacting are present or the interaction is controlled entirely by God. The acorn can know the right conditions only if it knows not only its destiny but also the nature of interacting elements and the effects of the interaction. The improbability of such knowledge is what led to the appeal to God as the provider of successful interaction. But if the interaction is controlled entirely by God, then what good does it do the acorn to know conceptually its possible future? If it cannot act on that basis, the knowledge is entirely useless. Whitehead's conception of "persuasion" does not help much. It can only mean that God presents an entity an opportunity for interaction. The entity must either recognize it as an opportunity (in which case it involves a knowledge of expedients and so of the results), or it interacts by necessity or chance. Chance is no explanation and necessity again makes the acorn's con-conceptual envisagement useless. The notion of a "thing" as a Divine volitional act avoids these complications.

As Hartshorne points out, God is the ground of the unity of potentiality and actuality, "and he is this because he is . . . a real agent who eternally does one or other of various pairs of alternatives which he 'can' do."[6] God is

6. MVG, 306.

free in his choice of what he shall do (consistent of course with his nature). The Divine Will's work is to bring about the maximum actualization of potentiality. Evolution is developing ever new forms, realizing ever new possibilities. But this means that in God there are unrealized potentialities. There are two reasons for this. (1). "If all potentiality is also actuality in God, then the distinction between potential and actual must really be an anthropomorphic illusion."[7] The world is really not progressing for already all so called potentialities are actualized in God. (2). If God could contain all possible value as actual value there would be no point to evolution.[8] Evolution would create no new values for God. If it be maintained that the evolutionary process creates new values for finite selves, it is true; but then whether the finite selves realize values or disvalues would make no difference to God, for in him all possible values are actualized, by hypothesis.

IV. SELVES AND POTENTIALITY

What is God's nature? The question is used in a very limited sense. It refers to the primordial nature of God, but not in Whitehead's use of the term as the realm of Eternal Forms. It means what is God in himself as distinguished from his activity; or what was God before the beginning of his

---

7. Ibid, 37.

8. Ibid, 225.

activity? The answer is, nothing. God is himself as acting. There never was a time when he did not act, and whenever he acts he acts according to character. But what is his character? The answer is, the way he acts. There is no soul or core of being, or faculty that acts. The soul, the being, the faculty is nothing but the act. If a time can be imagined when God did not exist and then all of a sudden he existed, this springing into existence would be the springing into existence of an act and no more. That act, however, would be of a definite type. That definiteness is its character. There is no reason why it should be of that nature rather than another. It just is. All reality has a "given" element about it; a fact that just is.

This initial act of being,[9] was not only of a definite kind, it was also a rational act.[10] It could make plans and realize them. It could evaluate, choose, create, and progress. That is the nature of reason. God's nature, then, is that of a definite rational self, or, to put it differently, God's nature is the nature of a definite rational activity which is selfhood. But what is a self?

---

9. Talking of such "springing up" of being is not to be construed that such a view is entertained. It is merely an attempt to explain what a nature is "in itself."

10. This inquiry has shown that mechanical activity cannot explain novelty. Growth and development can be explained only by purposive, rational activity.

The problem merits several different studies entirely devoted to it. Here it is only necessary to apply the "whole-thing" theory to self. On the basis of this theory a self is not a soul that has activity, nor a group of "faculties," nor a "something" that endures through change and holds the changing states together. A soul that has activities but itself is inactive does nothing, and is as useless as any "core" of being. A "something" that endures through change without itself experiencing change can neither explain change nor hold the changing states together, for it must make changing adjustments to the changing states in order to hold them together. The concept of "faculties" is likewise a difficult concept. If the faculties are potentialities inhering in the soul, the difficulties in the inherence theory are invoked. If the faculties are independent powers, the unity of the self is destroyed. Again, if faculties are needed to account for some functions of the self, then why not for all? There would then be a seeing faculty, a hearing faculty, a smelling faculty, etc., etc. But whether the faculties be few or many the real difficulty is that the unity of the self is destroyed or placed in some non-explainable substance in which the faculties inhere. The self, to be sure, may be conceived as the activity which unifies the faculties. In this case, however, the self would have to rethink, rewill, and re-experience all that the thinking

faculty thinks, that the will wills, and that the senses experience. If the self has to do this eventually, why appeal to the faculties? In denying the reality of the faculties there is no intention of denying the functions that the faculties are supposed to perform. What is denied is that the faculties are needed to perform them. The functions are functions of the self, and not of the faculties. The self, then, is that active whole which experiences itself as such and makes choices for reasons.

A self has a structure, an organic structure. This structure is the self's nature. There are two factors in each self's structure. The basic factor is the structure of selfhood in general, which the previous paragraph described. The other factor in each self is the particular structure that differentiates one self from another. The characteristics that distinguish one self from another is that self's particular nature (as distinguished from the nature of selfhood in general). The general structure of selfhood may be called the law of selfhood. The particular structure is a definite concretion of that law. The need for a law of selfhood is shown by the general agreement in the structures of particular selves. It will be recalled that this chapter has shown that a law is an abstraction unless thought by some mind. Now the self, of course, is a mind. Does a self, thus, think its own law of selfhood and purposively follow it? As far as human selves are concerned that is not true. They

discover the law of selfhood in their nature. They do not consciously follow it. The self is very well organized in accordance with the law of selfhood by the time the law is consciously discovered, or thought. This is what is meant by calling human selves dependent. They follow a law not of their own making.

The law, however, must be concrete, i.e., it must be thought and actualized to determine or create anything. As the law of a thing is a formula defining God's creative activity, so the law of selfhood may be considered the formula defining God's activity in creating selves. There are two difficulties, however. One has to do with the freedom of the created self; the other has to do with the fact that God himself is a self. Does God deliberately follow the formula in his own development? God certainly does not discover the law of selfhood in himself the same way a created self does, i.e., as an accomplished fact for which he is not creatively responsible, for then another God would be needed to think and actualize the law etc, ad inifitum. Neither can God deliberately create himself by the formula of selfhood for he would first have to be a self to create himself, for only a self can think a formula. The solution is that God's selfhood establishes the formula. In being a self God both creates the formula and thinks it in one and the same act. Thus God is independent, and self-created.

Every self has also a particular structure, for every being is in character. Now this particular structure of every self is the result of the original activity of this self (its original self-act), plus all its consequent choices and acts. The original self-act is that self's original character (or structure). The original self is nothing other than this original self-activity. This original self-act conforms to the general formula of selfhood but in addition it has a given element. It is what it is because it is what it is. It is a brute fact, but not of a mechanical nature. It is rational and can act so as to realize ends (within limitations). The limitations of the original human self-act are enormous. Its selfhood is thus a dependent selfhood. It depends on God's creative activity for its <u>general</u> self-activity. But as the original self-act (sustained always by the general self-activity proceeding from God) realizes its goals one after another, it becomes more and more independent. Its particular structure becomes more definite and more creative and more rational. At any one time, however, the character of a self is the product of its original self-act plus all its choices, and all its acts. Its potentialities, thus, are its ability to make rational choices within the limitations set by the original self-act and its consequent acts. The potentialities increase as the self-activity becomes richer with experience. The actualization of one potentiality opens up a series of other potentialities. The

creation of potentialities enlarges with the increasing determination of selfhood.

The greater the integration of the particular self-structure the more that self becomes independent in the creation of its destiny, though retaining its metaphysical dependence on God. Finite selves, thus, are both dependent and independent. The increase of independence, it should be noted, does not diminish the dependence, but merely marks a greater determination of the particular self-structure. Such greater determination of the particular self-structure still depends upon the Divine activity that creates and sustains the general self-structure. Of course there is no general self-structure existing by itself; nor is there any particular self-structure existing by itself. Any actual self is a complex of the two. The term "general self-structure" is only a description of the formula God follows in creating and sustaining selves. Every actual self is thus a synthesis of a constant and a variable element. The constant element is the law of selfhood energized by God. The variable element is the creative activity of the particular self in question. As this variable element develops and becomes more integrated, it becomes more and more self-determined (i.e., more independent in its creative activity), yet always dependent upon the Divine energizing of the constant element. How God can posit a self that is dependent on Him and yet can be independent through its dependence, is beyond human comprehension. Never-

theless, such a theory must be held by any view that accepts the reality and createdness of finite selves. God creates the self; God sustains the self (gives the self energy); God reproduces the self after periods of unconsciousness. Thus God provides the continuity; the finite self provides the identity. God provides the energy; the finite self utilizes that energy to realize its purposes.

The self is thus creative. It creates both objectively and subjectively. Objectively it creates works of art, states, institutions, machines, friendships, wars, homes, philosophic systems. Subjectively it creates itself. In both types of creative acts the self (allowing for the dependence already explained) becomes metaphysically more real. Since selfhood is the test of metaphysical reality, then the more self-determined a finite self becomes the more metaphysical reality it has. That is, as the finite self matures (develops) the particular self-structure becomes more and more signigicant. It does not thereby become less dependent on the sustaining activity of God (general self-structure), but it becomes more creative in its own independent (self-determining) activity. Its distinctiveness becomes more prominent. This greater originality does not destroy the general structure of selfhood, but enriches it. But a self cannot mature without being objectively creative as well. Self-determination goes hand in hand with objective creation. Now in so far as creativity

is a test of metaphysical reality (since creativity is the test of selfhood), the creative activity of finite selves evinces the metaphysical reality (activity) of the finite self. Indeed, a creative self increases the total creative activity of the universe. The universe composed of a society of selves is metaphysically richer (and so richer in potentialities) than a universe of only one self.

Metaphysically a self must be creative to remain a self. Thus every self is metaphysically co-operating with God as long as it continues in its selfhood. Each self may create with varying degrees of efficiency, but create it must. Each self adds to the sum total of metaphysical activity. In this it has no choice. Its only choice is in the amount of creative activity and in the nature of that activity. A self becomes morally, as well as metaphysically, co-operative with God when it creates to the fulness of its abilities and in conformity with God's will. It is free to reject either or both of these. A self may lazily create at a minimum, or it may create effectively but contrary to God's will. In the latter case there would be a maximum of creative activity, but a minimum of created values (relatively speaking). The phrase "creative activity" is thus used in a restricted sense. It means whatever a self freely does, be it good or bad. Henley's "Invictus" expresses the attitude of the metaphysically well integrated, but defiant person:

> It matters not how strait the gate,
> How charge with punishments the scroll,
> I am the master of my fate;
> I am the captain of my soul.

Tennyson in In Memoriam A. H. H. ("Prelude") expresses the religious attitude of the metaphysically well integrated person:

> Our wills are ours, we know not how;
> Our wills are ours, to make them thine.

In finite selves, then, there are three factors: (1) a given,created fact (the original self-act; (2) a law of selfhood (God's general activity in creating selfhood); (3) the rational (free) choices or purposes of the self. At any one time the self is a result of the history of the synthesis of these three factors. The more developed a self becomes the greater is the significance of the third factor. In the Divine Self the second and third factors are identical. God is completely self-created. But even in God's self there is a given element. It is the original character of God as interpreted in this section. It is the primordial act of the universe; a rational actuality; a definite self-act that establishes its own laws, purposes, and thoughts by this very act. No reason can be given for it except that it is.[11] Its

---

11. Stace (POH, 50-51) would say that such an appeal to brute fact, being an appeal to the irrational (since there is no reason for it) leaves the universe unexplained. To explain means to find a reason for things. Brute fact can be a cause, but not a reason. In discussing Hegel it was shown that Hegel preferred rational explanation to causal explanation. Can it be, then, that Stace is right in his

reason is its own rationality. Its cause is its own causality. Having purposes it progressively realizes them. Like the finite self its character at any one time is the product of its original self-act plus all its choices and all its consequent acts. Again, like the finite self, its potentialities are its ability to make rational choices in conformity with its nature. The more potentialities God actualizes, the richer his life becomes, and the more potentialities open up to him. Contrary to Aristotle the highest reality, God, is not pure actuality with no potentiality. God is an actuality

---

(11 cont.) interpretation of Hegel and that both would condemn the appeal to brute fact? It is not necessarily so. It is true that a brute fact which acts mechanically explains nothing. But a brute fact need not act mechanically. It may be a mind acting purposively. Purposive activity is rational causality. Rational causality does not deduce reasons, but creates them. Stace interprets reason in terms of deduction, thus cause cannot be rational for a cause does not deduce but produce. Reason, interpreted in terms of purpose, however, produces and so is causal. The category of causation mechanically interpreted cannot explain the universe, but a universal mind can explain causation. Such a mind may be a brute fact, as far as its own appearance is concerned, but it certainly can explain the universal process and itself. It explains itself by coherently describing what it does (i.e., such a description is possible of mind). It is "brute" only in the sense that it is uncaused, not that it is indescribable. Hegel would thus not call it "brute," for being describable it is explainable, since for Hegel to explain is not to deduce (as with Stace), nor to find a cause for, but to coherently describe. Cf. above, 53ff.

so rich he can yet realize a multitude of potentialities beyond any human comprehension. When he realizes the ones he chooses to realize, new ones grow out of the actualization of the old. This is the truth in Whitehead's theory of the Consequent Nature of God and the objectification of actual entities. The view here presented differs from Whitehead's, however, in that he allows for no new potentialities, but only for new occasions for realizing the eternal potentialities of God's Primordial Nature; whereas this view allows for increase in potentialities.

All this means that metaphysically speaking potentialities are to be found only in selves. Finite selves have potentialities, God has potentialities. Things are the creative activity of God expressing itself in a number of particularized formulas. Their potentiality is the potentiality of the divine creative activity consistent with the limits and scope of the formula. -- Potentiality is in rational thought as implication; it is in personality as plan or purpose; it is in physical things as formulas of God's creative activity.

ABSTRACT

The problem of this dissertation is twofold: (1). Is the category of potentiality a positivistic or an ontological category? (2). If ontological, what does it imply about the nature of the objects to which the category applies? Since the category of potentiality received its classic exposition by Aristotle a historical survey of the concept precedes the direct investigation of the problem.

Aristotle stresses both the epistemic and the ontological nature of the category. In so far as the potentiality of a thing describes what the thing may become, the category has epistemic values. In so far as the potentiality of a thing is the thing's power (δύναμις) to become something else, the concept has an ontological application. Aristotle was interested in the potentiality of thing; Kant was interested in what is involved in a knowledge situation when a thing is known as a possibility, as an actuality, or as a necessity of experience. Möglichkeit was for him, as "real possibility," a modal category applying to the formal conditions of experience in general. Logical possibility means conceivability or the thinkable. Aristotle never succeeded in giving potentiality any metaphysical support, because logically potentiality must precede actuality, yet causally actuality must precede potentiality. Thus potentiality was a logical concept drafted to perform a causal function. With Hegel

explanation is rational rather than causal. A process is explained when coherently described. Development is the "implicit" (potential) becoming "explicit" (actual). Reason and consequent take the place of cause and effect. The Absolute embodies in actuality all that proceeds out of itself (its "objectivity") as potentiality.

Whitehead interprets potentialities as Eternal Objects. By "ingression" into actual entities they become actualized. The realm of Eternal Objects is the Primordial nature of God. This view of Whitehead may be called the "conceptual view" of potentiality. The analysis of other recent interpretations of the category of potentiality leads to the discovery that there are two main viewpoints on potentiality with various theories under each. One is the positivistic viewpoint, which either denies the concept any ontological reality or refuses to consider the ontological problem; the other is the ontological viewpoint which attributes to the concept a metaphysical validity. The positivistic position is that potentiality is only a concept expressing a certain regularity of sequence in change. The ontological position is that there must be some objective basis to the regularity of sequence, and so the concept of potentiality is applicable to that objective basis.

Further analysis reveals that there are four typical theories of the ontological viewpoint. (1). The conceptual

theory just attributed to Whitehead and, of course, his followers. (2). The contextual or environmental theory which places potentiality in the context, or environmental pattern of things. (3). The inherence theory which places potentialities in things. (4). The "whole-thing" theory which looks upon the thing itself as its own potentiality.

A critical definition of possibility and potentiality showed that when possibility is limited to mean "real possibility," in the sense of what is implied by the structure of reality (not in the Kantian sense of "real possibility"), the term possibility and potentiality are practicably interchangeable. Yet they have different connotations. Possibility is the coherently conceivable, involves the whole, looks forward to novelty, is conceptualistic. Potentiality is power, refers especially to the "thing," is dynamic, looks backward into causal connection, yet is telic. Possibility fits in better with the Platonic and Kantian tradition. Potentiality fits in better with the Aristotelian tradition, in its emphasis on the power of the individual.

The problem of potentiality, in the ontological sense (which is the final viewpoint adopted in this dissertation), is bound up with the "law of sufficient reason" for the latter states must somehow be connected with the former states. On the conceptual theory the eternal forms are real possibilities because they are effective causes. How this can be is not

clearly explained. On the contextual view the multifarious elements in any context continuously change about so as to create ever new potentialities. But unless the elements (individual members) of the patterns can change and develop, the pattern would always remain the same. The inherence theory takes on many forms, but each ends in the infinite regress. It tries to explain the future mechanically by putting it in the past, and so can never stop going further and further back into the past.

The "whole-thing" theory is that the potentiality of a thing is the thing itself. This dissertation favors this view, but to be tenable it must define the thing in ontological terms, not phenomenally. The "whole-thing" is an entire active process taken as a whole. The whole is described by a formula or law of the active process. What does such a definition of a "thing" imply about its metaphysical nature?

By an analogy with the nature of thought a law was shown to be concretely entertained when being actually thought by a mind. When a mind acts on its thoughts the law receives a second concretion. A law that is not thought is an abstraction. An activity that is not amenable to a definite law is an abstraction. Both are needed. The union can be found only in thought, for a law is nothing until thought. An activity embodying a formula must thus be of the nature of

thought. The activity entertaining the thought must also know the nature of the expedients needed to realize its purpose. The activity must be able to think, to act, to know the nature of other things. Only rational minds can fulfill these conditions. Only God can know enough about the universe to hold it to its purpose. The potentialities of things therefore are their formulas describing the creative activity of God within the limits of those formulas. The potentialities of selves are their own rational self activity. In human selves these potentialities are limited. In the Divine self they are beyond human comprehension and ever increasing. This conclusion is different both from Aristotle, who denied any potentiality to God; and from Whitehead who denies any increase in potentialities.

CONCLUSIONS

The following conclusions have emerged:

1. The concepts of "real possibility" and potentiality are practically identical, yet have different connotations, possibility following the Platonic and Kantian tradition, potentiality the Aristotelian.
2. There are two fundamental theories about the applicability of the category of potentiality, the positivistic and the ontological. The ontological theory is accepted.
3. There are four forms of the ontological theory, the

conceptual, the contextual, the inherence, the "whole-thing."

4. The "whole-thing" theory alone coherently grounds potentiality. The nature of the "whole-thing" is pure activity embodying a law.
5. Thought alone can be that type of activity.
6. The potentiality of things is the potentiality of God's thought creatively active within the limits of definite formulas.
7. The potentialities of selves are their own rational self-activity.
8. The more potentialities selves actualize the more new potentialities open up to them.
9. God, as the Supreme Self, has potentialities beyond human comprehension. As he progressively actualizes them, more and more potentialities open up to him. This conclusion differs both from Aristotle's conclusion, which maintained God had no potentialities; and also from Whitehead's, which allows for no increase in potentialities.

B I B L I O G R A P H Y

BIBLIOGRAPHY

Adams, G. P.--Art.(1934)
"What Makes Possibility Possible."
Possibility(University of California Publication in Philosophy).
Berkeley, Calif.: University of Calif. Press, 1934.

Aristotle.--Met.
Metaphysics (tr. and ed. Hugh Tredennick). Loeb Lib. 2 vols.
New York: G. P. Putnam's Sons, 1933.

Baldwin, James Mark (ed.)--DPP(1901,1902)
Dictionary of Philosophy and Psychology. 3 vols. (vol.3 in 2 pts.).
New York: The Macmillan Co., 1901, 1902.

_____Art.(DPP)
"Potentiality."
Baldwin, DPP, II, 317-318.

Baumgardt, D.--DM
Das Möglichkeitsproblem.
Berlin: Reuter and Reichard, 1920.

Bergson, Henri--CE
Creative Evolution (tr. Arthur Mitchell).
New York: Henry Holt and Co., 1911.

Boodin, J. E.--TIU
Three Interpretations of the Universe.
New York: The Macmillan Co., 1934.

Bowne, B. P.--MET
Metaphysics.
New York: American Book Co., 1926.

_____ KS
Kant and Spencer.
Boston: Houghton Mifflin Co., 1912.

_____ TTK
Theory of Thought and Knowledge.
New York: American Book Co., 1925.

Bradley, F. H.--AR
Appearance and Reality.
London: Swan Sonnenschein & Co., 1893.
New York: Macmillan & Co., 1893.

Brightman, E. S.--PI
A Philosophy of Ideals.
New York: Henry Holt and Co., 1928.

Buchanan, Scott--POS
Possibility.
London: Kegan Paul, Trench, Trübner & Co., Ltd., 1927.

Cassirer, Ernst--SF
Substanzbegriff und Funktionsbegriff.
Berlin: B. Cassirer, 1910.

_____SFTR
Substance and Function and Einstein's Theory of Relativity (tr. William Curtis Swabey and Marie Collins Swabey).
Chicago: Open Court Publishing Co., 1923.

_____ER
Zur Einstein'schen Relativitatstheorie.
Berlin: B. Cassirer, 1921.

Cohen, Morris R.--RN
Reason and Nature.
New York: Harcourt, Brace and Co., 1931.

_____Art.(7ICP)
"Possibility in History."
Proceedings of the Seventh International Congress of Philosophy, 19-23.

Demos, Raphael--Art.(1926)
"Possibility and Becoming."
Jour. Phil., 23(1926), 234-240.

Dewey, John--LOG
Logic.
New York: Henry Holt and Co., 1938.

DeWulf, Maurice--MP
Mediaeval Philosophy.
Cambridge: Harvard University Press, 1926.

Dubray, C. A.--Art.(CE)
"Actus and Potentia." Vol.1, 124-125.
The Catholic Encyclopedia.
New York: Encyclopedia Press, Inc., 1913.

Emmet, Dorothy M.--WPO
Whitehead's Philosophy of Organism.
London: Macmillan and Co., Ltd., 1932.

Fránquiz, José A.--BTCI
"Borden Parker Bowne's Treatment of the Problem of Change and Identity."
Unpublished Doctor's dissertation, Boston University, Boston, 1940.

Fuller, B. A. G.--HGP:A
History of Greek Philosophy: Aristotle.
New York: Henry Holt and Co., 1931.

Gallinger, A.--POM
Das Problem der Objektiven Möglichkeit.
Leipzig: J. A. Barth, 1912.

Garnett, A. C.--Art.(1940)
"Functionalism and the Intentional Act."
Phil. Rev., 49(1940), 453-464.

Gilson, Etienne--PTA
The Philosophy of St. Thomas Aquinas.
Cambridge: W. Heffer and Sons, Ltd., 1924.

Gunn, J. A.--TIME
Time.
London: George Allen and Unwin, Ltd., 1929.

Hartmann, Nicolai--MUW
Moglichkeit und Wircklichkeit.
Berlin: Walter de Gruyter & Co., 1938.

Hartshorne, Charles--MVG
Man's Vision of God.
Chicago: Willett Clark & Co., 1941.

Hazelton, R.--Art.(L(39))
"Human Purpose and Cosmic Purpose."
Jour. Phil., 36(1939), 656-660.

Hegel, G. W. F.--PDG
Phänomenologie des Geistes. (Sämtliche Werke, Zweiter Band).
Stuttgart: Fr. Frommanns, 1927.

_____POM
The Phenomenology of Mind (tr. J. B. Baillie). 2 vols.
London: Swan Sonnenschein & Co., Ltd., 1910.

_____WL
Wissenschaft der Logik. 2 vols. (Sämtliche Werke, Vierter and Fünfter Bände).
Stuttgart: Fr. Frommanns, 1928.

Hegel, G. W. F.--PG
System der Philosophie. Dritter Teil. Die Philosophie des Geistes. (Sämtliche Werke, Zehnter Band).

_____SL
Science of Logic (tr. W. H. Johnston). 2 vols.
London: G. Allen and Unwin, Ltd., 1929.

_____SP:L
System der Philosophie. Erster Teil. Die Logik. (Sämtliche Werke, Achter Band).
Stuttgart: Fr. Frommanns, 1929.

_____PM
Philosophy of Mind (tr. William Wallace).
Oxford: Clarendon Press, 1894.

_____LOH
The Logic of Hegel (tr. William Wallace). 2nd ed.
Oxford: Clarendon Press, 1892.

Hofstadter, Albert--Art.(1935)
"Power and Causality."
Jour. Phil., 32(1935), 5-19.

Hollands, Edmund H.--Art.(1907)
"Possibility and Reality."
Phil. Rev., 16(1907), 604-615.

Holt, Edwin B., et al.--NR
The New Realism.
New York: Macmillan Co., 1912.

Jaeger, Werner--ARI
Aristotle (tr. Richard Robinson).
Oxford: Clarendon Press, 1934.

Johnston, W. H.--SOL
Science of Logic. 2 vols.
London: G. Allen and Unwin, Ltd., 1929.

Kant, Immanuel--KRV
Kritik der Reinen Vernunft.
Leipzig: F. Meiner, 1926.

_____CPV
Immanuel Kant's Critique of Pure Reason (tr. Norman Kemp Smith).
London: Macmillan and Co., Ltd., 1929.

Kattsoff, L. A.--Art.(1937)
"Modality and Probability."
Phil. Rev., 46(1937), 78-85.

Knudson, A. C.--POP
The Philosophy of Personalism.
New York: The Abington Press, 1927.

Köhler, W.--PVWF
The Place of Value in a World of Facts.
New York: Liverwright Publishing Corporation, 1938.

Krikorian, Y.H.--Art.(1930)
"The Meaning Of Purpose."
Jour. Phil., 27(1930), 96-105.

Loewenberg, J.--Art.(1934)
"Possibility and Context."
Possibility, 81-105.
Berkeley, Calif.: University of Calif. Press, 1934.

Mackay, D. S.--Art.(TIME)
"Succession and Duration."
Time (University of California Publication), 177-200.
Berkeley, Calif.: University of Calif. Press, 1935.

Meinong, A.--MUW
Möglichkeit und Wahrscheinlichkeit.
Leipzig: J. A. Barth, 1915.

Metz, Rudolph--PSGG
Die Philosophischen Strömungen des Gegenwart in Grossbritannien.
2 vols.
Leipzig: Felix Meiner, 1935.

_____HYBP
A Hundred Years of British Philosophy.
New York: The Macmillan Co., 1938.

Miller, David L.--Art.(1936)
"Things and Potentiality."
Phil. Science, 3(1936), 19-25.

Montague, W. P.--Art.(NR)
"A Realistic Theory of Truth and Error."
New Realism.
New York: The Macmillan Co., 1912.

_____CSD
The Chances of Surviving Death.
Cambridge: Harvard University Press, 1934.

Montague, W. P.--WOT
The Way of Things.
New York: Prentice-Hall, 1940.

Moore, Jared S.--Art(1933)
"The Problem of the Self."
Phil. Rev., 42(1933), 487-499.

O'Connor, Edward M.--PAE
Potentiality and Energy (Ph.D. Dissertation). Catholic University of America, 1939.
Washington, D.C.: Catholic University of America Press, 1939.

Oxford English Dictionary--OED (ed. James A. H. Murray).
Oxford: Clarendon Press, 1909.

Paton, H. J.--KME
Kant's Metaphysics of Experience.
New York: Macmillan Co., 1936.

Pierce, G. S.--Art(DPP)
"Possibility."
Baldwin, DPP, II, 313-315.

Pepper, Stephen C.--Art.(1926)
"Emergence and Change."
Jour. Phil., 23(1926), 241-245.

Phillips, R. P.--MTP
Modern Thomistic Philosophy. 2 vols.
London: Burns Oates & Washbourne, Ltd., 1934.

Pichler, H.--MUW
Möglichkeit und Widerspruchslosigkeit.
Leipzig: J. A. Barth, 1912.

Possibility--POS
Possibility (University of California Publication in Philosophy).
Berkeley, Calif.: University of Calif. Press, 1934.

Proceedings of the Sixth International Congress of Philosophy--(6ICP)
London: Oxford University Press, 1931.

Proceedings of the Seventh International Congress of Philosophy--(7ICP)
New York: Longmans, Green & Co., 1937.

Ranzoli, C.--DSF
Dizionario di Scienze Filosofiche. 2nd ed.
Milano: Ulrico Hoepli, 1916.

Ross, W. D.--ARI
Aristotle.
London: Methuen & Co., Ltd., 1923.

Schilp, Paul Arthur (ed.)--POW
The Philosophy of Alfred North Whitehead.
Evanston and Chicago: Northwestern University, 1941.

Schlick, Moritz--ST
Space and Time (tr. Henry L. Brose).
New York: Oxford University Press, 1920.

Smith, Norman Kemp--CKC
A Commentary to Kant's 'Critique of Pure Reason'.
London: Macmillan & Co., Ltd., 1923.

Spaulding, E. G.--NR
New Rationalism.
New York: Henry Holt and Co., 1918.

Stace, W. L.--POH
The Philosophy of Hegel.
London: Macmillan & Co., Ltd., 1924.

_____Art.(1939)
"Novelty, Indeterminism, and Emergence."
Phil. Rev., 47(1939), 296.

Stallknecht, N. P.--Art.(HOK)
"Time and Possibility in Kant."
The Heritage of Kant, 87-113. (ed. G. P. Whitney and D. F. Bowers).
Princeton University Press, 1939.

Stout, G. F.--Art.(DPP)
"Faculty."
Baldwin, DPP, I, 369.

Strong, Edward--Art.(1934)
"The Possible and the Actual."
Possibility (University of California Publication in Philosophy).
Berkeley, Calif.: University of Calif. Press, 1934.

Tufts, J. H.--Art.(DPP)
"Power."
Baldwin, DPP, II, 318-319.

Urban, W. M.--Art.(1938)
"Elements of Unintelligibility in Whitehead's Metaphysics."
Jour. Phil., 35(1938), 617-637.

Van Roo, William A.--Art.(1940)
"Act and Potency."
Modern Schoolman, 18(1940), 1-5.

Verweyen, J. M.--PM
Philosophie des Möglichen.
Leipzig: S. Hirzel, 1913.

Wallace, William--LOH
The Logic of Hegel. 2nd ed.
Oxford: Clarendon Press, 1892.

Ward, James--RE
The Realm of Ends.
Cambridge: The University Press, 1911.

Weber, Alden O.--Art.(1938)
"Gestalttheorie and the Theory of Internal Relation."
Jour. Phil., 35(1938), 589-606.

Werkmeister, N. H.--POS
A Philosophy of Science.
New York: Harper and Brothers, 1940.

Whitehead, A. N.--RM
Religion in the Making (Lowell Lectures, 1926).
New York: The Macmillan Co., 1926.

_____--Art.(6ICP)
"Time."
Proceedings of the Sixth International Congress of Philosophy, 59-64.

_____PR
Progress and Reality.
New York: The Macmillan Co., 1929.

_____AOI
Adventures of Ideas.
New York: The Macmillan Co., 1933.

_____MOT
Modes of Thought.
New York: The Macmillan Co., 1938.

Whitemore, Charles F.--Art.(1938)
"The Locus of Novelty."
Jour. Phil., 35(1938), 141-148.

Whitemore, Charles F.--Art.(1939)
"The Paradox of Potentiality."
Jour. Phil., 36(1939), 239-247.

Whitney, G. P. and Bowers, D. F., (eds.).--HOK
The Heritage of Kant.
Princeton: Princeton University Press, 1939.

Wilson, G. A.--SIW
The Self and Its World.
New York: The Macmillan Co., 1926.

AUTOBIOGRAPHY

Joseph D'Alfonso, the son of Rocco D'Alfonso and Anna Sorrento, was born October 24, 1905 at Lettomanoppello, then in the province of Chieti, Italy. When four and one-half years old he accompanied his parents to America where

they established themselves in Portland, Maine. He attended the public schools of that city graduating from Portland High School in 1924 as an honor student. In September of that year he enrolled in the College of Liberal Arts at Boston University. He received the A.B. degree from that institution in 1928 having minored in English and majored in Philosophy. Being interested in the ministry and being a member of the then Methodist Episcopal Church, he entered Boston University School of Theology in the fall of 1928. Here he pursued studies leading to the S.T.B. degree which he received in June 1931. His major work was in the departments of Philosophy and Theology. Upon graduating from the School of Theology he served a summer pastorate in Youngstown, Ohio. In November of 1931 he accepted a pastorate in Jefferson, New Hampshire. In April 1932 he was ordained an Elder of the Methodist Episcopal Church and received into the full membership of the New Hampshire Conference of that church.

In 1938 he enrolled in the Graduate School of Boston University for the doctorate in philosophy. He pursued his studies while serving a pastorate in Methuen, Mass.